THE BUILDER

A Journal for the Architect & Constructor

JAN. 27, 1928 No. 4434

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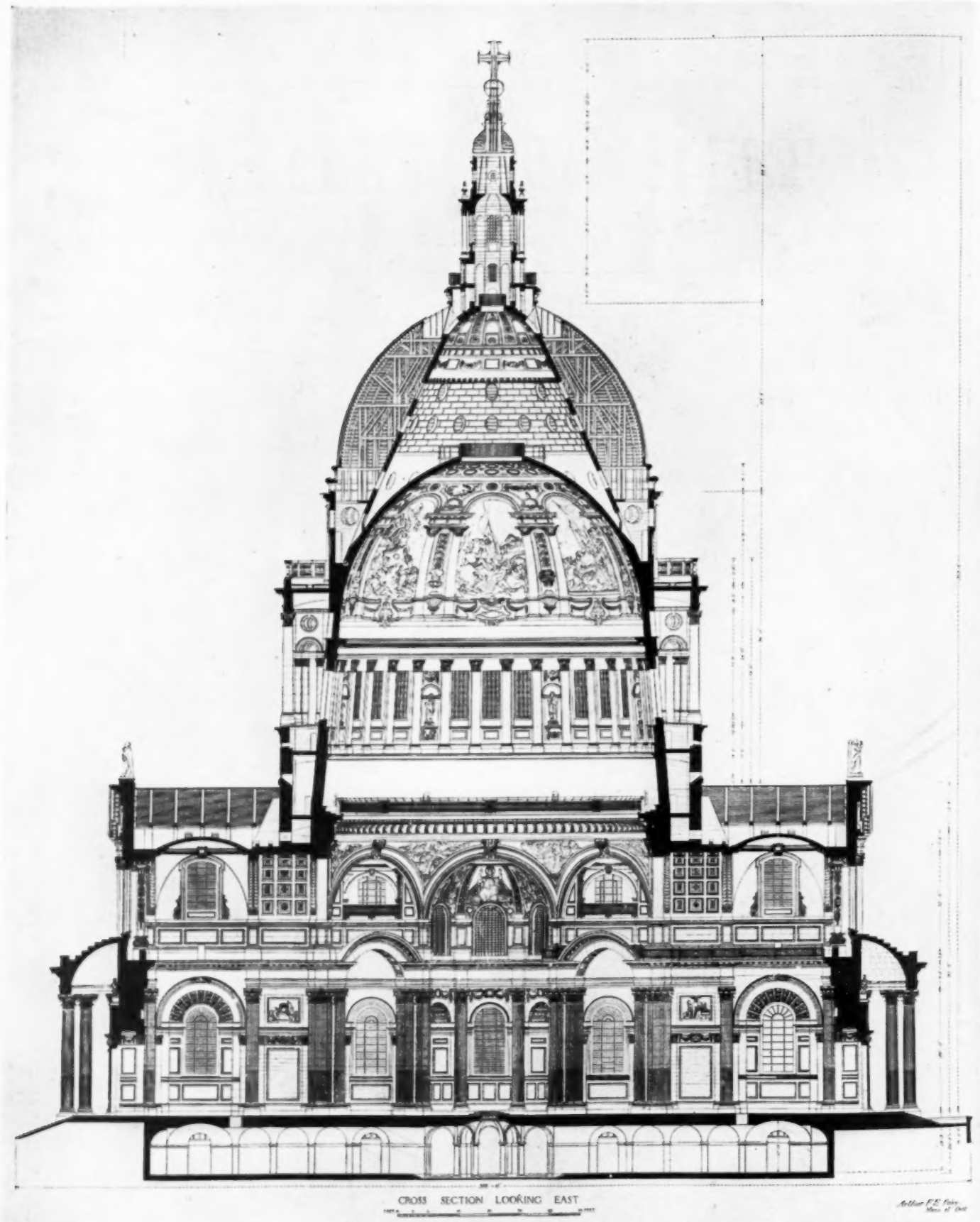
86TH YEAR



St. Paul's Cathedral.

From a drawing by Mr. Arthur F. E. Poley. (*See page* 166.)

THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXXIV. No. 4434. JANUARY 27, 1928.

WOMEN IN ARCHITECTURE

THE inevitable has happened at last, and a woman has won a first-class architectural competition. For many years lesser portents have foreshadowed this achievement: several of the professional prizes have been gained by women students, and there are now quite a number of women in practice. It is not our present purpose to discuss the merits or defects of Miss Scott's winning design for the theatre at Stratford-on-Avon, though we must offer her our congratulations, in passing, on obtaining the unanimous verdict of the assessors. There is every indication that her plans will be subjected to plentiful criticism, informed and otherwise, but especially otherwise, in the columns of the Press for months ahead. Our object now is to focus public attention on an event of some importance in the history of the architectural profession. From that profession, so far as we know, there has never been any attempt to exclude women. It may be that objections were raised in secret conclave at the R.I.B.A. some thirty years ago when the first woman was proposed for Associate membership after passing the qualifying examinations. It may be, we say, for we have no evidence that anything of the sort happened: if so, it was known only to the elders of the profession and has been long forgotten. The rank and file of the members, including all who are merely middle-aged, have been spared any doubts on the question, for it has been an accomplished fact for a generation. Women are now firmly established in architecture, and they are welcome there.

But those who read the increasingly numerous journals devoted to women's interests, so-called, cannot fail to be aware that this fact is unknown to the type of feminine journalist who combines persistent criticism of men architects in the mass with a frantic plea that women should flood the profession, and thereby remove all the imaginary shortcomings of modern domestic architecture due to male ignorance of the home or neglect of its administration. Architects may write and talk as much as they like, but these women journalists will never believe that any man has ever washed up a dish or remembered the urgent necessity of cupboards. It never occurs to them that long experience of domestic routine at home and protracted study of domestic planning at the drawing-board may have led him to conclusions differing fundamentally from those of the untrained amateur housewife. Cupboards, for instance, to an orderly male mind, appear too often the receptacle for rubbish that would go to the dustbin but for their existence. The architect knows, too, that space devoted to cupboards in any room is space lost in floor area, or alternatively an addition to the cubical contents of the building for which his client, not he, has to pay. In this connection, a correspondent informs us he "met a married architect the other day, a man whose houses are illustrated as models of good design, who confessed that in his own bijou residence there were twenty-nine cupboards, the fruits of his wife's persistence, and that a recent visitation of the whole series, made by him in secret, revealed the interesting fact that twenty-six of them are now filled with cardboard dress-boxes and other goods which he described, generally, as 'junk.' He whispered to me that his next home would have one cupboard per room, and no more. The hearts of all architect husbands will pray that he may be strengthened to keep his good resolution."

Then we have heard a good deal about bathrooms of late. But for the male architect, we are told, every cottage and every artisan flat would have spacious bathrooms with wide verandas glazed with the latest form of health-giving glass at heaven-knows-what per square foot. This reminds us of experiences at meetings of Housing Committees, when the women members would suggest every kind of gadget and extra without any hint how the harassed architect was to find the money to pay for them. If these critics would concentrate their energies on the abolition of "ornaments" on mantelpieces and of lumber elsewhere, they would save the housewife more work in dusting and cleaning than can ever be saved in washing up in this imperfect world. Spring cleaning, a legacy of the Victorian craze for hoarding rubbish, is very largely avoidable in any house that is kept properly furnished. But all these troubles would be solved, we are assured, if only we had women architects. And as we *have* women architects, one of them now very much in the limelight, let us see how matters really stand.

Miss Scott's success at Stratford-on-Avon is not the fruit of a lifetime spent at the scullery sink, or in the interior of cupboards. She went to an ordinary girls' school for a term of years, then to an architectural school for five more, and since then has acted as assistant in the offices of mere men. Her training at all stages has been identical with that of a man of similar birth and age preparing to become an architect. Her success cannot be ascribed to the fact that she is a woman, nor has she succeeded "in spite of being a woman." Her sex has been a godsend to the Press, from the chief morning journals down to the most sensational of the evening newspapers, but the plain fact is that she has won the competition as an architect, without any prefix. The Architectural Association School has every right to feel proud of the result, for during many years it has trained numbers of women students. Some of them have found their feet in architecture, others have found "affinities" in the same quarter and have formed partnerships, professional and otherwise, as a result, but some, we imagine, have found architecture very different from the thing they imagined it to be when their indulgent parents dispatched them to that seat of learning for five years after a similar period at an expensive boarding-school.

We have heard the qualities of the girl student in architecture discussed by those responsible for her training. Compared with her male counterpart, she is commonly supposed to be more conscientious, more inclined to concentrate on points of detail, and less ready to let her imagination take wings. That may be so, but generalisation as between sexes is always difficult, and exceptions to rules are always easy to find. The amateur theatricals for which the A.A. is justly famous may conceivably have contributed to Miss Scott's victory, but architecture, or rather its practice in after life, contains much that is not at all amusing. It can be very sordid, and never more sordid than when one has to argue endlessly with a fractious client about the more trivial details of domestic economy.

We cannot believe that girls entering an architectural school after the conventional secondary school or public school prelude have any special knowledge of housekeeping or any special interest in it; nor does their training in such schools equip them in such ways—that comes afterwards. They enter architecture, or at any rate they should enter architecture, with ambitions like those of their brothers of the T-square: if they are to make a success of life, they should come into architecture because they love it. And whatever skill they may attain in the details of domestic planning and equipment, we venture to think that few of them look forward to a career restricted to the provision of unlimited cupboards and sinks for other women.

NOTES

The President's Address.

FROM the President's address to students we may note what he said as to the evolution of an architect. He clearly sees that the education of the scholar, vital as it is, cannot supply the place of intimate contact with the actual conduct of building affairs. He said there was no better training than that obtained in an architect's office, provided that the office was one in which architecture was well understood. The work of the men so trained, many of whom we had with us to-day, proved this without doubt. He spoke of the immense value of measured studies of buildings and regretted the absence to-day of publications such as John o' Groats sketch book and the Architectural Association sketch books. The publication of books of photographs was not a good substitute—quite the contrary—the opportunities for visiting buildings in progress was not quite equal to the old system where the pupil visited buildings for which he had helped to prepare drawings. These remarks have some distinct bearing on the discussion on the system of training in the "Builder" Debate.

A Good Suggestion.

THE President, like many others, realises the need for a better understanding of the importance and value of architectural design amongst the general public, and he pertinently asks whether the youth at places like Eton and Winchester could not be taught something of the great values of beautiful buildings by which they were surrounded so that a real foundation for the understanding of architectural values might be laid in the early lives of all the students. How hopelessly at sea the general public often are in venturing to express an opinion on architectural design was clearly evidenced by the utterance of a very distinguished gentleman the other day on the result of a recent competition. This is an age of amazing tolerance. We wonder sometimes if this is all to the good. At all events we should all welcome such keen, but withal kindly, criticism as that bestowed on the students' designs this year by Mr. Sullivan.

A National Collection of Sculpture.

WE emphatically second the appeal by Sir Goscombe John for the proper arrangement and exhibition of the fine set of sculpture casts which have been collected at the Crystal Palace. They certainly ought to be got together in some easily accessible place for the benefit of sculptors and architects, and probably added to in such a way as to make complete the whole record of the world's best accomplishments in sculpture. We sincerely hope some definite steps will be taken before long to bring the study of architecture and sculpture into closer relationship. If the qualities of great sculpture were appreciated fully by architects we should get better architecture and sculptors ought to know more of the vital values of architectural art.

Drawings of St. Paul's.

IN the Presidential address to students (reported on page 172 of this issue), Mr. Walter Tapper congratulated Mr. Arthur F. E. Poley on his survey drawings of St. Paul's Cathedral, reproductions of which have just been published in book form. This is a really remarkable set of drawings, showing St. Paul's with a completeness that has never before been attempted. Some idea of the accuracy and beauty of the drawings may be gained from the greatly reduced reproduction of the cross-section through the dome which we give on page 164. Incidentally, this drawing is of considerable interest in connection with the controversy on the construction of St. Paul's which is now proceeding in our columns. The drawings consist of eight in collotype and twenty-four in photo-lithography, and the work has an introduction by Sir Reginald Blomfield, R.A., together with a descriptive account of the Cathedral, and biographical notes on Wren and his craftsmen. The doorway of which we give a sketch by Mr. Poley on the facing page is the work of Jonathan Maine, and is one of two doorways of similar design at the head of the geometrical stairs, one giving access to the Library, and the other to the triforium gallery. The work has been reproduced and printed by the Chiswick Press, Messrs. Chas. Whittingham and Griggs, Ltd., and is published at the price of seven guineas, by Mr. Poley, at "Willowbank," Hampton Hill, Middlesex.

Lent by DR. LINDLEY M. SCOTT to the Burlington Fine Arts Club Exhibition.

[These are dated about 1740, and are very fine examples of lime wood carving.]

The Burlington Fine Arts Club.

WE have been indebted to the Burlington Fine Arts Club for many interesting exhibitions, and the present one of miscellaneous objects of art is particularly attractive. The furniture and the pictures include examples of first-rate quality. We cannot recall anything quite so fine of its kind as the large picture by Richard Wilson, R.A., which shows a river scene with a distant view of Tabley House, Cheshire. This is a splendid record of English landscape, broad and luminous, and of admirable tone and colour. Such a picture as this is too good for private possession and ought to be a national possession—there is no striving after effect or suggestion of a manufactured composition but just a sincere and simple rendering of the charm of English landscape. We cannot refer to all the beautiful things of outstanding quality, such as the delightful Gainsborough—the mushroom girl—the pictures of Hobbema, Guardi, Reynolds, etc. The examples of furniture are of special interest, such as the beautiful little Queen Anne table and chairs valued at a thousand pounds apiece. In addition to all these there are choice examples of pottery and bronzes, and some wonderful jades.

A Garrison War Memorial Church.

WE illustrate this week a memorial which has been erected in a camp that thirteen years ago was crowded with recruits from home and overseas. For its erection the War Department allotted a dominant site at the entrance to the camp, and also—through the Chaplain-General—contributed to the building fund, but the bulk of the expenditure incurred has been subscribed by those who have the spiritual welfare of the troops at heart, and remember with gratitude and affection their efforts and sacrifice in the war. It is hoped that the outstanding debt of £2,000 will be discharged by some of those who know Bulford, and now hear of the completed memorial and the need of further subscriptions.

Town Planning Progress.

DURING the past few months town planning has made a remarkable forward move in England and Wales. Over 3,000,000 acres are now included in town planning schemes that are being prepared by 395 local authorities. When Dr. Addison, soon after the War, put forward town planning legislation, making action compulsory

An Old Bench End.

upon all authorities in urban districts with populations of 20,000 or more, it was prophesied by the pessimists that the Act would largely become a dead letter. Events have shown that those authorities who were under no compulsion to adopt town planning schemes already exceed those compelled to plan. The two old Universities have given a lead in this matter. Within the last few weeks a scheme for the east part of the Borough of Cambridge has been approved, and the preservation of the banks of the river Isis has been assured by the approval of the Preliminary Statement for Oxford and District. The growing opposition on the part of popularly elected bodies in England and Wales to greyhound racing is shown by the use made by local authorities of their powers under the Town Planning Acts to prevent greyhound racing tracks being established in districts that are reserved, or proposed to be reserved, for residential use. There has also been opposition to the erection of public garages in beauty spots.

Regional Development.

THERE has also been a rapid growth of committees considering regional developments. There are now 53 Joint Town Planning Committees in existence. These include representatives of 836 local authorities. They are responsible for planning areas covering approximately 16,446,795 acres, with a population of 31,323,477 and an assessable value of £204,500,000. The north of England is already almost covered by such committees, including those for Manchester, the South and North Tyneside, Leeds and Bradford, Doncaster, Rotherham, Sheffield, the Lake District and the industrial part of Lancashire and Cheshire. The recent establishment of committees for Sheffield, for the Lake District and for South-west Lancashire has filled in several gaps. London has been much behind the north of England, but in November a Greater London Joint Town Planning Committee was set up covering an area of 2,000 square miles. As in other countries, finance is one of the serious difficulties in regional planning. Many of the English committees have already completed their Preliminary Report, and are now seeking, in co-operation with county councils, to find some fair means of sharing the cost involved in making arterial roads, and reserving open spaces. Scotland has been extremely backward in recognising the value of either town or regional planning. Very few schemes have yet been started north of the Tweed, but the Scottish Board of Health are taking steps to encourage town planning in industrial districts around Glasgow and Edinburgh, while the Society for the Preservation of the Rural Beauties of Scotland has been established.

Products of the Machine.

MR. LEWIS MUMFORD, in "Sticks and Stones," tells us that "It is the lesser artists and architects who, unable to control and mould the products of the machine, have glorified in its nakedness." If for nakedness we substitute simplicity we find ourselves in disagreement with him. In looking around at the articles in everyday use we wonder if anybody really believes in this theory. The machine is at its worst when it is vulgar, and vulgarity is its dominant note. It is possible, we admit, to be so simple as to be uninteresting. "Simplicity," says Mr. Aldous Huxley, "is no virtue unless you are potentially complicated." This analogy applied to the simple product of the machine implies the complications of sounder materials, sounder workmanship, and less oak stain.

Eligible Houses.

AN interesting commentary on one of our articles is to be found in one of Father Ronald Knox's essays in "An Open Air Pulpit." Remarking upon the changes in the suburbs he says, "If we go on like this much longer, we shall return to the nomadic stage of culture in which men live like the ancient Scythians or the modern gypsies, in caravans; only the caravans will be built for speed, and they will never rest except when a puncture necessitates it. Till that day the motor problem is incidentally exacerbating the housing problem. We all want toy houses with a smaller nursery and a larger garage."

"Architecture" "Schools" Number.

AT the end of this month the January-February number of *Architecture* will make its appearance. This issue is given over to the planning of the modern elementary and secondary school, and contains plans and illustrations of some more recent school buildings of these types. Two of the latest "open-air" schools—designed by Mr. Topham Forrest, Chief Architect to the London County Council—are included, as well as a number of Lincolnshire County schools, which are incorporated in an article on "The Planning of the Modern School," by Mr. Henry G. Gamble. Mr. Taliesin Rees's lecture to the recent Educational Conference on Secondary Schools is reproduced. The issue will contain also the customary architectural features, including another contribution from Mr. E. Maxwell Fry to his series on "Axes and Vistas," dealing this time with Kingsway and Bush House.

Television.

MR. J. L. BAIRD, the inventor of television, is, it appears, making progress towards the perfecting of a "home set," and we may expect television will follow the usual procedure of scientific inventions of value, improving year by year until it attains to something akin to perfection. When this stage is reached, architecture must be considerably influenced, for we shall be in a position virtually to see buildings at a distance, and the difference between seeing a building itself and seeing photographs, however good, is a difference of kind rather than of degree.

Detail of Doorway at Head of Geometrical Stairs, St. Paul's Cathedral.

DRAWN BY MR. A. F. E. POLEY.

GENERAL NEWS

Professional Announcements.

Dunfermline Town Council has appointed Mr. David Shaw burgh engineer and surveyor. Mr. Shaw, who is burgh engineer of Saltcoats, was for some time assistant engineer to Dunfermline District Committee of Fife County Council, and held a like appointment at Arbroath.

Mr. J. Roger Preston, M.R.S.I., etc., consulting engineer, has moved into new offices at 7, Southampton-street, Bloomsbury-square, W.C.1.

Architects' Estates.

Mr. Andrew Oliver, A.R.I.B.A. (69), of Queen's-gardens, Hyde Park, W., left £2,955

Mr. George Gregory, J.P., F.S.A. (61), of Green Den, Stonehaven, architect and civil engineer (personal estate in Great Britain) left £3,303.

Mr. E. H. Harbottle, of Garth, Topsham, Devon, head of Harbottle & Sons, Exeter, architects, architect to the Dean and Chapter of Exeter from 1894, left £20,698.

An Archæologist's Estate.

Mr. Thomas Southwood Bush, of 20, Camden-crescent, Bath, a well-known archæologist and antiquary, founder of the Bath branch of the Somerset Archæological Society (net personalty £14,523), left £17,287.

"The Berger Scholarship."

We learn that the date for the return of candidates' completed entry forms in this competition—originally January 31 of each year—is now May 1.

An Egyptian Sphinx.

Among the chief acquisitions made by the Trustees of the British Museum during the past month and approved by the Standing Committee was an Egyptian Sphinx carved in augite diorite, inscribed with the name of Amenemhat IV. (Twelfth Dynasty, *c.* 2,000 B.C.). The face of this sphinx, unfortunately somewhat damaged, is the only known portrait of Amenemhat IV. The figure has been given by the National Art Collections Fund.

Worthing Borough Extension.

The application of Worthing for a provisional order incorporating two adjoining parishes, Durrington and Goring, has received the approval of the Ministry of Health. The extension will considerably more than double the present area of the borough, will give the town an additional mile and a half of sea front, and will bring the famous Cissbury Ring, the beautiful Goring Woods, Highdown Hill, and John Selden's Cottage at Salvington within the borough.

Hereford Cathedral in Danger.

Hereford, like the City of London, is anxious for the safety of its Cathedral. According to the *Morning Post*, the oldest and most beautiful portion is in danger. The trouble is in the south transept. The west window, which in 1440 was inserted into the Norman wall of 1080, is bulging to such an extent that the casual onlooker has the impression that it may collapse into a thousand pieces any minute. The buttress that supports this south transept from the outside is in a shocking condition. But it is the south wall of the south transept, a few yards away, that presents the greatest problem. So dilapidated is the condition of this perpendicular wall that one can dislodge great pieces of it as if it were rotten wood. The buttress of the wall is scaling off in an alarming fashion. Something will have to be done soon if the south transept of the Cathedral is not to collapse. This will delay indefinitely the rebuilding of the Chapter House, which has been in ruins since the Civil War, and which the authorities are anxious to reconstruct. It is estimated that one thousand pounds will be needed to reconstruct the southern portion of the Cathedral.

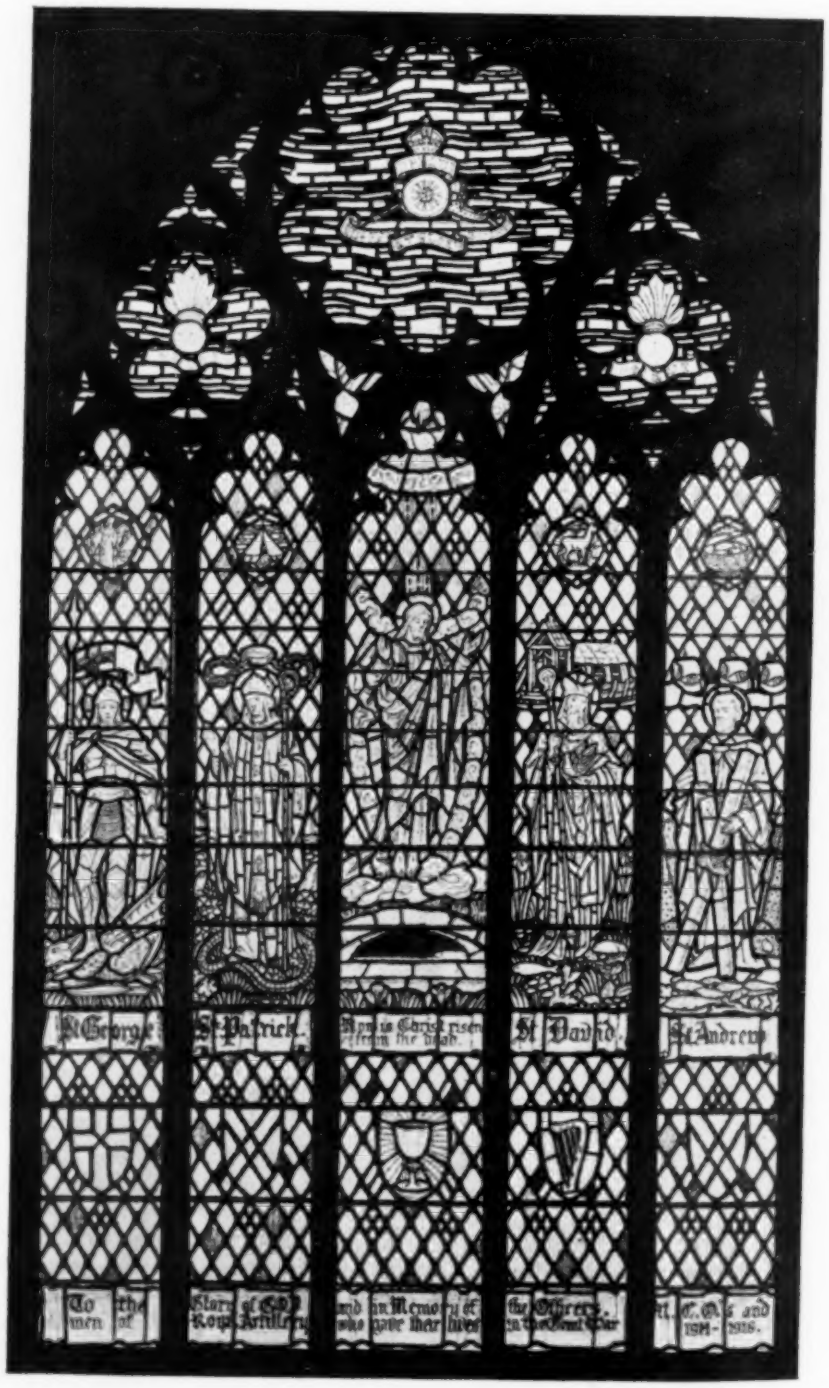
COMPETITION NEWS

Industrial Designs Competition.

Particulars of the Fifth Annual Competition of Industrial Designs to be held at the Imperial Institute, South Kensington, London, S.W.7, in June, have now been issued, and can be obtained from the Secretary of the Royal Society of Arts, John-street, Adelphi, London, W.C. 2. Intending competitors must apply to the Secretary of the Society between May 1 and 12 for the necessary entry forms. In all, scholarships and prizes amounting to nearly £1,600 are offered in connection with the 1928 competition. The Empire Marketing Board are offering in connection with this competition three prizes for a design in four colours for a shop window bill, with the lettering "*Buy Empire Produce from Home and Overseas.*" The Royal Society of Arts offers a prize of £50 for designs for an Entrance Hall to a Cinema, and a prize of £25 for a design for a Silver Cup for the Swiney Prize for the best published work on jurisprudence. Four scholarships will also be awarded—the James Hyde Scholarship of £100 for Architectural Decoration or Textiles; one of £75 for designs for printed and woven dress goods and printed furnishings offered by the Tootal Broadhurst Lee Company; the Lewis Berger Scholarship of £60, open to apprentices, students or craftsmen in the craft of painting and decorating; and the Art Congress Studentship of £50 for practising craftsmen or designers, founded by the late Sir William Cuthbert Quilter. Other prizes, ranging from £5 to £52 10s., are also offered.

The Preservation of St. Paul's Cathedral.

[We have received a long letter from "Inquisitive" in reply to Mr. Harvey's letter published in our last issue. In consequence of the pressure on our columns this week we are compelled to defer publication till our next issue.—ED.]



Garrison Church, Bulford: Royal Artillery Memorial Window.
By MR. W. T. CAMM.
MR. G. L. W. BLOUNT, F.R.I.A.I., Architect.
(*See p.* 174.)

THE REPAIR OF ANCIENT BUILDINGS—IV

BY A. R. POWYS, A.R.I.B.A.

The Disposal of Rainwater.

NOTHING except a defective roof hastens the decay of an ancient building so much as defects in the system designed to carry away rain and surface water. Most damp patches in a building which cannot be attributed to leaky roofs are due to leaky rainwater pipes. Therefore this matter should receive constant attention.

Generally speaking, buildings that are liable to long periods of neglect are better with only the simplest or without any rainwater disposal system. In buildings in constant use the system should receive as much thought and attention as do the sewage drains from a modern house. The principles, however, are different. For our present purpose, it is presumed that the roofs are sound and that only the disposal of water from the eaves downward is under consideration.

Systems for the Disposal of Rainwater.

Water may pass to the ground by direct drop either from eaves or spoutings, or it may be conveyed in pipes. In deciding which of the two is the better these questions should be considered: (1) Will the building be neglected when the work is done? (2) What is the nature of the soil on which it stands? (3) Are the eaves high above the ground, are the points of discharge well clear of the walls, and is the facing of the wall particularly liable to damage from more or less concentrated dropping water?

It may be that in the case of a low building with projecting eaves and standing on a clay soil the rain should be allowed to drip direct from the eaves to the ground, there to soak away. The advantages of this are: little initial cost, little upkeep expense and the provision of evenly distributed water at the foundation level, which may be useful in dry seasons and which certainly helps to avoid uneven contraction in the foundation bottom. In such a case provision may be made at the base of the wall to direct the splash outward. This may be done by a paving laid to fall steeply away from the wall at its base. (Fig. 3.) It is sometimes wise to remove existing eaves-gutters and down pipes. Whenever water is concentrated at certain spots provision should be made by drains in the ground or channels on its surface to lead it well away from the building.

It may be in the case of a high building, as a tower, that a long rainwater pipe is undesirable because of the initial expense and because it is difficult to get at for repair. Further, rainwater pipes applied to buildings not designed to receive them may be held disfiguring. And in this connection lead pipes are better because they last very much longer than other kinds, and because they are more pleasant to see. They are good, on account of their durability, for buildings liable to neglect.

Down Pipes and Eaves-Gutters.

Iron down pipes are more commonly used because they are cheaper at the outset. The following suggestions should be considered in regard to them. If they are fixed two or three inches clear of the wall, water from any leak that occurs will run down the pipe and not down the wall. This is important, because iron pipes are liable to fracture and then to concentrate water on a patch of walling, much to its damage and to the hurt of the fittings within. When down pipes are fixed in this way rainwater heads

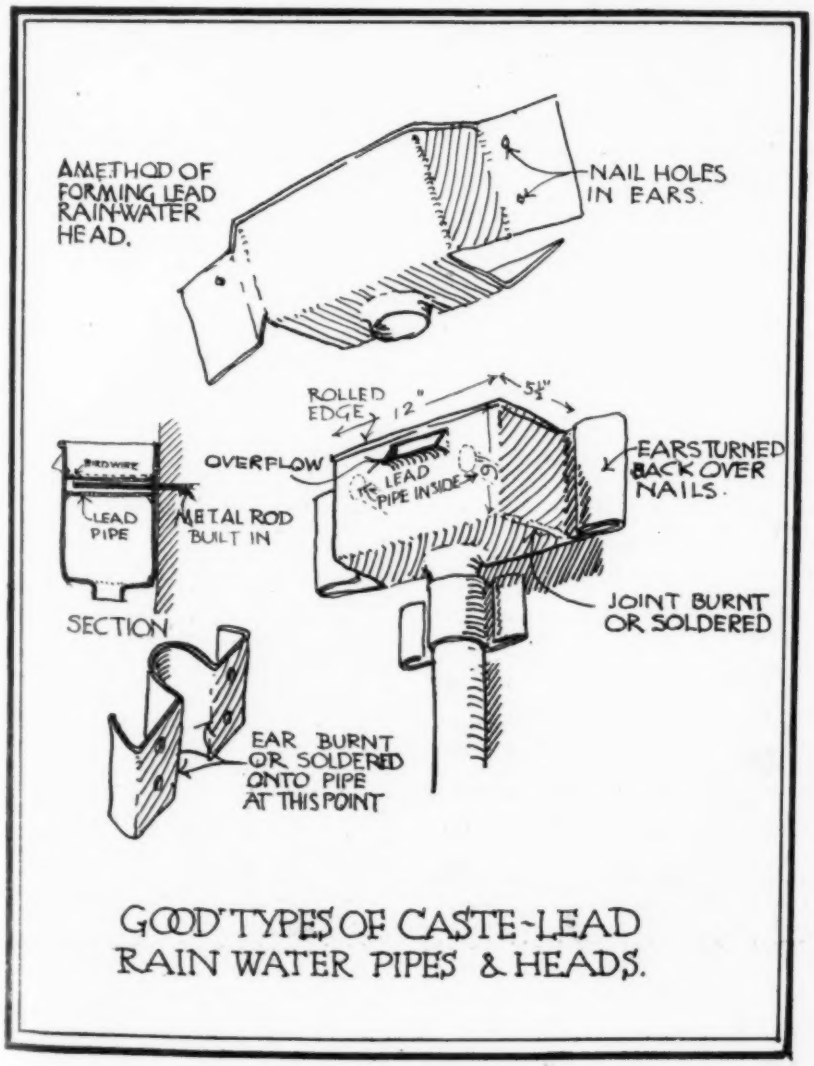


FIG. 2.

FIG. 3.

should also have outlets arranged clear of the wall. Pipes to be fixed clear of the walls should be round and should be without ears. They should be fixed by special arms known as "holder bats." When fixed to ashlar work these arms should be of gunmetal. To avoid fracture at the junction between two lengths of pipe the joints should be free and in order to make repairs easy the upper length should only enter the lower by a little less than half the depth of the collar at the junction. This is done to make it easy to remove a defective length without taking down the whole pipe, for cracked iron pipes cannot be repaired; renewal is imperative. It has been suggested that these pipes are best without any bends and that therefore they should stand out from a wall as much as the projection of the lowest plinth. It is certainly desirable that no old work should be cut back to allow for their passage. A disadvantage of iron down pipes is that they need to be kept painted. This is not so with *lead* pipes; these are always to be preferred. Where they exist they should be kept repaired; where they do not, it should be an object to put them in the place of others. They may be made of cast lead (seven pounds to the foot) bent round a mandrill and the two edges burned together. Solder is often used for the joint, but a burned joint is to be preferred. The accompanying sketch (Fig. 2) shows a good way of fixing these pipes to an old wall. Lead pipes are usually fixed direct on the wall face, and they usually require heads which should also be of lead. Both iron and lead pipes should discharge into a proper channel or above a gulley or into it by a back inlet, so that they may be easy to clear at this point.

Where new eaves-gutters are to be used they should be of cast-iron, or sometimes of wood. When of iron, half-round gutters are usually to be preferred on old buildings. Iron guttering should be watched, as it is liable to fracture, and, like defective rainwater pipes, to concentrate water on a patch of wall, with dire results. A defective length of gutter should be renewed as soon as it is discovered. Old lead eaves-gutters should be maintained, in spite of a pronounced disadvantage which belongs to their nature, namely, that they are apt to sag unless ample provision is made to prevent it. Wooden gutters are out of fashion, but they are often suitable, especially for thatched roofs, for they can more easily be given a form suitable to take the drip from thatch eaves, which vary considerably in projection as they age. Wood gutters, well made of oak or teak and well pitched within, have a long life.

The point where gutters behind parapets discharge into rainwater heads is one where trouble sometimes begins. If it can be arranged, there should be ample waterway here, at a level some 6 in. below the gutter, so that the outlet may not get blocked. Chutes or spoutings from parapet gutters should have a like provision made. Where these are high above the ground, as on towers, they should have a great projection

to ensure that water does not drop on to offsets or against the building. Some advantages belong to spoutings which are formed as *troughs* and not as pipes. Lead spoutings should be adequately supported to prevent sagging, and should have lips formed to pour the water clear and prevent back dribble.

Disposal of Water at Ground Level.

Rainwater from roofs, when it reaches the ground, may be disposed of in three ways. It may be allowed to soak direct into the ground, either dripping from the eaves on to the earth or on to prepared paving; it may drip from the eaves or be led by down pipes into open channels; or it may be taken direct into drains from the feet of down pipes. A building rising direct from well-kept grass is beautiful; rising from channels or paving, it is perhaps less so. The means adopted to dispose of water when it reaches the wall foot is further complicated by the nature of the soil, by the level of the floor within the building, by the nearness of paths to the building, and by the fall of the ground. Unless drains are kept in order they get choked and become useless, and this may become a reason for avoiding them in cases where buildings may be long neglected as are some churches. In the case of inhabited houses, rainwater drains are less likely to be neglected, and are, therefore, to be preferred, as a rule. The suggestions made below must not be regarded as applicable on every occasion; they are no more than suggestions, and should be used or varied to suit each separate case.

Where eaves drip on to grass, it may be well to arrange for subsoil drainage by channels filled with clinkers or broken stones or by agricultural pipes. In the last case, the pipes should be continued well away from the building.

Where drains are not desirable, but where the floor is below the ground level, it may be advisable to lay paving sloping outward from the foot of the wall. In some such cases the wall below ground from its base to the top of the paving should be faced with a vertical damp course. It may be desirable to add a trench filled with clinker, etc., and grassed over at the outer lip of the paving, or, in some cases, at the very base of the wall (see Fig. 4).

Where drains are desirable and eaves drip direct, or where walls are severely exposed to wind-driven rain and there are down pipes, a channel at the ground level may be advisable to conduct the water to gulleys.

Channels or paving may be formed of concrete, but paving on concrete has advantages and its appearance is generally to be preferred; paving without concrete is useless. Concrete set with kidney pebbles is good for channels and may suggest other like treatment. Both channels and paving are apt to set away from the wall, and every precaution should be taken to prevent this. It is most important to secure that walls against which the concrete is laid should be cleaned and the joints well raked out, and the concrete well packed into the crevices between the stonework. Channels may be paved with selected brick or stone, and the choice should be made with a view to appearance as well as durability. It is a good plan to make the bottom of a channel more than half its width from the wall, and the width of the channel should be made to accord with the projection of the eaves. Channels have one great advantage over drains; it may always be seen whether they are working well. This is important in buildings subject to periods of neglect.

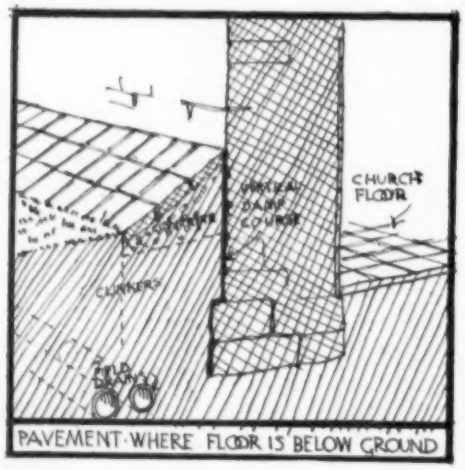


FIG. 4.

In connection with this matter of channels the custom of lowering the ground against buildings to a level below the floor should be considered. Where this is done the trenches should be wide, if possible three times as wide as they are deep. A narrow trench becomes foul and fills with leaves and refuse. It is the writer's opinion that it is better to provide vertical damp courses below the ground level than to sink deep open trenches; but Mr. Wm. Weir writes: "There is nothing so good as an open channel; it allows of air getting to the face of the wall."

Rainwater Drains.

Where drains are laid for rain water, the gulleys should not be trapped, but it is an advantage that they should have catch pits. The gulleys should have gratings, and these should be level with the bottoms of the channels. If they are lower than the ground near by, leaves tend to collect there and to block the gratings. The drains from the gulleys should be laid with properly jointed socket pipes, for otherwise they are apt to get choked with earth carried into them by worms or borne by the water. It is also desirable that they should be provided with access for cleaning. It is said that in clay soils agricultural pipes do not get choked. Rainwater drains should be laid where they are unlikely to be disturbed; in churchyards the lines of paths are suitable. Always a plan should be made of their course, and this should be kept with the survey papers.

The drainage of waterlogged soils is beyond the scope of these articles. It is enough to remember that to rid a subsoil of its water is sometimes the cause of settlements in a building.

(To be continued.)

THE NEW FORM OF BUILDING CONTRACT

II.—A DETAILED CONSIDERATION—(*Continued*).

By E. J. RIMMER, B.Sc., A.M.Inst.C.E., Barrister-at-Law.

IN the last issue of *The Builder*, the subject matter of these articles was dealt with in the broadest possible way in an introductory article. We must now proceed to consider in a little more detail the various provisions contained in the new form, and it will be convenient to do so under a few selected headings referring to all the provisions of the contract relating to the subject.

Status of the Architect.

As was mentioned in the introduction, the long controversy touching this question has at last been settled. The architect under the new form must now be regarded as the *specially authorised agent* of the building owner, and as such, his powers of controlling the work have been given expression to in the very forefront of the new form. It is there stated, in Clause 2, that the work shall be carried out and completed in every respect to the reasonable satisfaction of the architect, who to this end may from time to time in his absolute discretion issue further drawings and/or written details, instructions, directions, and explanations (referred to as "architect's instructions") in regard to any of the following matters :—

(*a*) The variation or modification of the design, quality and quantity of the contract works or the addition or omission or substitution of any work.

(*b*) Any discrepancy in the drawings or between the drawings and specification and bills of quantities.

(*c*) Removal from the site of any materials brought thereon by the contractor and the substitution of other materials therefor.

(*d*) The removal and re-execution of any works executed by the contractor.

(*e*) The dismissal from the contract works for good and sufficient reason of any person employed thereon.

(*f*) The opening up for inspection of any work covered up.

(*g*) The amending and making good of defects.

To the unpractised eye these powers of the architect might be regarded as nothing more than the powers given to him under the 1909 R.I.B.A. form, but it should be observed that there is no limitation to the powers of the architect in these respects. He has not, for example, to prove that the works which he orders to be removed are defective, or that materials are not within the contract conditions, and there is an express provision to the effect that "the contractor shall forthwith comply with and duly execute any work comprised in such further drawings and/or architect's instructions." Leaving for a moment the question of what remedies, in cash payment, the contractor may have if the architect requires something to be done beyond that which under the contract the contractor could be expected to do for the contract price, the provisions of this clause lay down, without ambiguity or possibility of evasion, the absolute duty of the contractor to do what the architect requires and the power of the architect to order that which in his opinion is requisite for carrying out his scheme of work.

Moreover, by the provisions referring to arbitration, in Clause 31 of the form, special provisions have been inserted to prevent delay in compliance with the architect's instructions by the contractor on the ground that he must, before doing so, prepare evidence for arbitration proceedings in regard to the cost of complying with the architect's instructions. It is there provided that arbitration proceedings in respect of claims by the contractor in regard to removal from the site of material brought thereon by the contractor and the substitution of other materials therefor, or the removal and re-execution of works executed by the contractor shall only be permissible "when the obtaining of relative evidence shall not delay the works." Although this clause is perhaps one of the least satisfactory from the point of view of legal draughtsmanship, the intention of the clause appears to be that nothing, not even the contractor's anxiety to prepare evidence for arbitration, is to interfere with the prompt compliance with the architect's instruction.

Another provision which affects the question of the architect's status is that in relation to disputes. Here again any decision which he makes in regard to differences or disputes which may arise either between the employer or himself and the contractor is merely that of a person authorised by the employer to make an offer to the contractor of the settlement of the dispute on the terms of his decision.

If the contractor does not appeal from such decision within 14 days, he is in effect deemed to have accepted the offer, and both parties are bound by it, but if, within that period, notice of disagreement is given by the contractor, then any such decision becomes of no binding effect either upon employer or

contractor and the matter must go for judicial decision to the arbitrator.

In regard to certification, the architect is similarly a person entrusted by the employer to tell him how much the contractor is entitled to be paid both in regard to interim and final certificates. It is in regard to these duties, and to these duties alone, that it may be said that an architect owes some duty to the contractor as well as to the employer, but in view of the recent case of *Wisbech Rural District Council* v. *Ward*, where Mr. Justice Sankey decided that in giving interim certificates the architect was not an arbitrator or a quasi arbitrator, but merely the agent of the building owner (although this case was upset in the Court of Appeal on other grounds, Mr. Justice Sankey's decision on this point was not upset), the architect is, it is submitted, no more than a specially authorised agent, in regard to the certificates.

His agency, however, in regard to such matters, is irrevocable by the employer, because there is express provision in the contract that if the employer fails to pay the certificate of the architect or interferes with or obstructs the issue of such certificate, he becomes liable to have the contract determined by the contractor and to make good any loss which the contractor suffers thereby.

There is, of course, one way in which an employer can revoke the special authorisation of a particular architect, namely, by terminating his services, but even then the authorities that he has exercised before ceasing to be the architect under the contract cannot be over-ruled by a subsequent architect. This latter provision was of course in the old 1909 form of contract.

In addition to the powers of the architect referred to above, there are, under the contract, various and usual powers conferred upon him, many of which are contained in the old form. The only new ones which seem appropriate for mention under this heading are those relating to setting out and sub-contractors.

The provision in regard to setting out of the works is that the architect or his nominee shall fix all main building lines and boundaries, and that the employer shall indemnify the contractor against damages resulting from the incorrect setting out of these lines; that when the architect has set out the main boundaries, the contractor shall set out the works, and that after he has done so, the architect shall check the main line setting out, and, if he does not disapprove, the contractor shall be relieved of responsibility for the main lines of the work.

In regard to sub-contracting, the architect has been given a very valuable and special power in regard to providing for the payment of sub-contractors. In the first place, he may demand proof from the contractor that he is not unreasonably withholding any money due by the contractor to a nominated sub-contractor before certifying for payment; and secondly, if he desires to secure payment to any nominated sub-contractor before final payment becomes due to the contractor, he may include in any certificate to the contractor an amount to cover such payment, whereupon the contractor shall discharge the debt and himself be discharged from liability for the work.

In so far as the contract has removed from the architect any judicial duties, that is, duties which cast upon him an obligation to safeguard the contractor's interest as well as the employer's, it is thought that the profession as a whole will welcome such provision. Architects will be free to do, in the employer's interest, what they think desirable in the interests of the work, without any regard to the contractor's feelings in the matter, because they will know that he has got his rights and remedies under the contract, and is not dependent upon the architect's judicial consideration of the matter.

It may be repeated, as said by Sir William Mackenzie, in his report to the Contract Conference: "I am convinced that the architect under the standard form is in many ways in a stronger position, and can more properly and effectually subserve the interest of his client than formerly."

The Definition of Contract Works.

One of the most important questions which have been before the Conference is that of defining the works to be done by the contractor for the contract sum. As has been shown, the widest possible discretion has been given to the architect to have done by the contractor any work which he thinks necessary for effecting the purpose of the contract; but it would be quite impossible to give any such powers to the architect if, at the same time, the contract did not make it perfectly clear that this power, if exercised so as to require the contractor to do work which he had no reasonable expectation of having to do when he tendered for the contract, would result in extra payment by the employer for extra work, and reduction of payment by the employer for works omitted. In order to deal with such a situation, the essential thing which the Conference had to do was to define what works, called "contract works," should be included in the sum payable to the contractor, called the "contract sum." The definition adopted is that the contract works are to be "the works shown upon the said drawings and described in the specification and the said Bills of Quantities." This, however, does not carry the definition quite far enough, and it is afterwards provided that for the contract sum the contractor shall provide "everything necessary for the proper execution of the contract works as before defined."

Although this definition does not materially differ from that in the 1909 form, the new form does, in a bill of quantities contract, lay down a very clear definition of the quality and quantity of the work to be executed under the contract, although leaving it still to the drawings and the specification to supply the particulars of form and size. The contract in terms states that the quality and quantity of work to be executed under the contract "shall be deemed to be fully set out in the Bills of Quantities, and the specification shall not impose any obligations upon the contractor not so set out."

The clause further provides that:—

"The said Bills of Quantities shall be deemed to have been prepared in accordance with the 'Standard Method of Measurement of Building Works' last before issued by the Surveyors' Institution. Any error in quantity or omission of items from the Bills of Quantities shall not vitiate this contract, but shall be rectified and the value thereof, as ascertained under Clause 7, shall be added to or deducted from the contract sum, as the case may be, provided there shall be no rectification of the contractor's calculations or prices."

It is therefore clear that this new form of contract places upon the bills of quantities the responsibility of setting forth the conditions affecting the quality and quantity of the work, and that, in a bill of quantities contract, the employer cannot expect to obtain for the contract sum work in excess of the work set out in the quantities.

The description in the bills of quantities will be sufficient to cover all the works necessary for producing the item set out in the bills if it complies with the Standard Methods. It will not be regarded as an omission from the bills of quantities if it is found that some detail of workmanship which the standard method does not require to be scheduled has been omitted. On the other hand, if the quantities omit an item which for the description of a particular work should, by the standard method of measurement, be included in the bills of quantities, then the contractor, if he is required to do the work, will be entitled to have it dealt with as an addition to the contract sum.

Thus the contract brings greater importance to the methods of measurement which have been agreed between the builders and the quantity surveyors and the architects for several years. It may be said to have the effect of making the need of the employment of quantity surveyors in the preparation of quantities for building works more desirable.

In view of the more precise standard of what the contract works are, the financial adjustments necessary for dealing with extra works or omissions resulting from the issue of additional drawings and architect's instructions become simplified and less likely to cause dispute. The contract provides, in express term, that if compliance with the additional drawings and architect's instructions "involves extra work or expense, or loss beyond that involved in the execution of the contract works," then, unless they were issued owing to some breach of the contract by the contractor (as, for example, the supply of improper materials or the execution of improper work), the employer shall pay the contractor the price of the work, or the expense and loss aforesaid.

In order, however, not to take the architect unawares, the duty is laid upon the contractor of giving notice, before he commences the work, that the further drawings and written instructions will, in fact, cause expense beyond that involved in the execution of the contract works; but such notice may be dispensed with by the arbitrator if he is satisfied, having regard to all the circumstances, that the varied work would have been carried out had the notice been given. It would obviously be unfair to penalise the contractor for failure, to comply with a mere technicality, if the action of the architect and of the employer would have been precisely the same. *(To be continued.)*

CORRESPONDENCE

The Repair of Ancient Buildings.

SIR,—May I thank Mr. Davidson for his interesting comments, which I welcome. If I have learnt anything from a long study of the repair of ancient buildings it is that no one can dogmatise on that subject, and I ask forgiveness if I appear to do so.

He rightly questions my dictum that an architect "should be chosen for one reason alone, namely, that he has shown by actual work that he can repair old buildings without doing harm." I am well aware of the ridiculous position that this sentence might put us all in if it were not read in conjunction with actual facts. A young architect begins in such works by being resident assistant. His master and employer sees what he can do; more and more responsibility falls on him and eventually it is recognised that he is competent to work independently. But the transition from the position of an assistant with little responsibility to that of a man who can give orders independently is very gradual, and I have made up my mind that it is only after proving his ability that he should be entrusted with any ancient building which is of value to the public. Risks in regard to the repair of such buildings must be reduced to the minimum. The Society for the Preservation of Ancient Buildings has and does encourage the training of its younger men. I myself was trained under its ægis, as were others. I don't see how else to state my conclusions shortly than in the way I have chosen. I therefore do not withdraw that sentence; it represents the best advice I can give.

With regard to making a full survey, I know well the difficulties of an architect who has charge of an ancient building as regards getting a proper survey of it made. They are now seldom made. I emphasised this point because I wished that the layman, the employer, should be encouraged to instruct his architect to make a proper survey, for the ordinary scale of architects' charges are insufficient to enable him to do so except at his own expense. It becomes our duty to ask our clients for authority to make a proper survey and to point out the economy resulting from it and other advantages.

A. R. POWYS.

⁂ Other letters are held over until next week.—ED.

PRESIDENTIAL ADDRESS TO STUDENTS.

AT last Monday evening's meeting of the R.I.B.A. the President (Mr. Walter Tapper, A.R.A.) delivered his presidential address to students. It was, he said, the custom of the Institute for the President to address the students when presenting the prizes for the work they had done. When one thought of the many addresses delivered on such occasions one might be fairly certain that everything worth saying had been said, and it became increasingly difficult to add anything with advantage. A keen criticism of the various subjects was given by Mr. Sullivan a short time since, and he hoped the students would agree with him that it was one really worth having. It was, of course, severe, as adverse criticism must be if it was sincere, but it was also kindly. Mr. Sullivan realised, as they all did, the immense amount of time and trouble the students had given to their work.

He would first of all congratulate the students who were prize-winners, and to those not so fortunate say a few words of encouragement. To work, and to have done their best, brought its own reward and happiness. They all could give instances of men who, in their young days, were never fortunate in winning prizes, yet later had done excellent work, and had been happy and contented. Therefore, he said, "Do not be cast down." If they persevered in their work and loved it they would get their reward in some form or another. We could not attach too much importance to occasions such as that, first of all because they were directly concerned with the work of the younger men, with whom the future of architecture lay, and secondly because they gave an opportunity of seeing the practical result of a system of education with which that Institute was directly concerned. Their Board of architectural education was responsible for the curricula adopted by all the recognised architectural schools of the country, and they saw on such nights as that the practical results of their endeavours. Architectural education to-day was a vastly different matter from what it was not so many years ago. Then it was more or less a haphazard affair. The boy was articled to an architect for some years; at the expiration of his articles he either continued in the same office or went to another as an improver for a year or two. He then became an assistant. During this period he qualified by voluntary examination as an Associate of the Institute, and finally began practising as a full-blown architect, and a very anxious time he had, as they all knew, notwithstanding the exhilaration of having a shot at any competition which happened to be going. It could be easily imagined, with such a system, how much depended on the architect to whom he was articled, and even more so on the pupil himself. A busy practising architect had little time in which to give him personal attention, although there were plenty of instances to the contrary. In any case, there was little spoon feeding, and the pupil, if it was an office where good work was being done, and he was determined to make good, picked up—and he used the term advisedly—all sorts of information which he found of inestimable value when starting his own practice. Sometimes at the end of his articles he took on the job of clerk of the works, gaining not only practical knowledge of building, but also the friendship of the workmen, from whom he learnt much. In the speaker's opinion, and in the opinion of many others, there was no better training than that, provided that the office was one in which architecture was well understood. The work of the men so trained, many of whom we had with us to-day, proved this without doubt. In addition to the routine work of such an office, it was a common thing for men to work at the Association and Academy schools (the only existing architectural schools of the time of which he was speaking) in the evenings and to sketch and measure old work at South Kensington. The holidays were spent on sketching tours. A keen man bent on making himself efficient had little time for play, which might or might not have been a misfortune. The published sketch books of the time, such as the John o' Groats, Spring Gardens, and that of the Architectural Association, showed the excellent work and sound draughtsmanship of the student of those days. He could not help regretting that nothing of the kind was being published to-day, for they were, without doubt, stimulating to the student. The publication of books of photographs was not a good substitute—quite the contrary. As a striking exception in this connection he would like to congratulate Mr. Poley on the survey of St. Paul's Cathedral which he had recently published. Such years of devoted labour in making such beautiful drawings of this fine building deserved more than a word of praise on such an occasion. He hoped our students might profit by such an object-lesson. There was little doubt, the speaker continued, that the average training of the student in those days was not training at all in the best sense. Looking back, one realised that there was a great deal of wasted effort, and very little guidance.. That the system obtaining to-day was absolutely necessary went without saying, and most would agree in thinking that our students were very fortunate.

In recent years the aim of the Institute in its educational reforms had been to make the training of architects more intelligible, and he thought they would all agree, looking round the walls of that room, that it was meeting with the success it deserved. Much had been done, and there was still more to be done. For instance, he ventured to think it imperative that the students should be brought into closer connection with the actual building. They knew, of course, they were given opportunities for visiting buildings in progress, but that was not quite equal to the advantage given by the old system, where the pupil visited buildings for which he had helped to prepare drawings. He knew that the schools, in order to make up for that lack of practical training, urged the students on leaving school to spend some time in an architect's office, as improvers, before they began to practise on their own account. It should, if possible, be made compulsory. If he might venture to make a suggestion to the masters of our schools, he would say, "Encourage the students by every means in your power to found themselves in the best traditions of the past. Teach them all there is to be taught in this respect, so that later they may not fail for the want of knowledge of the principles and traditions which have gone to the making of great architecture." It was because of this that he attached the greatest value to the measured drawings subject, for which a prize was given. There was no better way to learn the traditions of their art. They must, of course, measure with intelligence, not merely with the idea of getting a record of a fine building, but in order to master the meaning of it, whether it be as regards plan or general proportions, detail or construction. This was all he had to say especially to students, and now he ventured to make a few remarks on general education, in so far as it concerned them and architecture.

In former days the patrons of architecture and the fine arts were the aristocrats, who had sufficient knowledge of the subject to be able to discriminate between the good and the bad; at the same time the definite traditions of building were generally understood and followed. To-day the patrons were the people, and it was with them that the future of architecture lay. He should have no misgivings concerning the part democracy was to play provided the study of the fine arts formed part of its general education. When all was said and done, and notwithstanding much vulgarity, the age in which we lived was really enlightened. The mass of the people were thinking deeply concerning many things, including architecture, but they needed leading into the right channels, and this, he ventured to think, could best be done in our elementary and secondary schools, in our public schools and universities. He was not suggesting that the masters should know the technicalities of their art, but that they should recognise how all-important architecture was, and, if properly understood, what an influence for good it could be to the nation. To know this and to teach it was, in his opinion, the only hope of better things. And in this he could not but think of the many fine examples of architecture in this country which should be of the greatest value. For example, take our public schools; two, Eton and Winchester, instantly came to mind. The history of England was architecturally expressed on their walls. Did the masters call attention to this? Did they tell the boys that these buildings expressed most of the human virtues? Greater object lessons in architecture, of real value in helping to form the boys' character, could not well be found. Or, again, take the village schools. Were the children taught to be observant of the beautiful cottage architecture that so many villages possessed or the architectural qualities of the village churches? All such buildings invariably expressed the things which went to the making of a great people. Men from our universities, well educated in the ordinary sense, very often became trustees of the lovely churches up and down the country. Would these buildings have suffered, as they had, if the study of the fine arts had formed part of such men's general education? Would not those gentlemen themselves have been better for this knowledge? He thought so. Education did not solely consist of book learning. Our cathedrals and churches, our manor houses and cottages, were sermons and lessons in stone, and should be appreciated from that point of view. So he would ask those responsible for education whether they could not be made of more direct use for educational purposes. If they were to save the country from the pollution which was going on—and there was little time to lose—it behoved them to bestir themselves and see that their children were taught the value of architecture. Education had not yet come into its own with the multitude. It must be some time before we got an educated democracy. In the meantime, what was to be done? Here architects might be useful. All they could hope to do was to keep the rush-light burning. They must all, every one, if they were to be sound guides, agree on first principles. They must set themselves to recapture the great traditions of their past, that they might speak with one voice so that the minds of the people would not become confused. That, to-day, was our great need if we were to be a real help. The powerful aid of the Press should be invoked, and propaganda of every kind, such as lectures in

our towns and villages on the value of the fine arts as an influence for good, should be given. Here he wished to voice the thanks of the Institute to Mr. and Mrs. Quennell for the admirable architectural lectures which they gave to children during the Christmas vacation. They were indeed valuable, and he sincerely hoped they might be followed by others in due course. The spoliation of the countryside did not arise because the people wished it: they did not desire ignoble or mediocre homes. It had come because the people had not received the education necessary for an appreciation of better things. There was much commendable civic pride in our towns, but not enough, and what there was was of little use unless it had that educational backing. Architecture interpenetrated our lives, and it was imperative that it should be good if the nation was to progress. Just as we were all the better if the sun shone, or when we were admiring Nature's loveliness, so were we the better people for great architecture. It spoke to us intimately every moment of our lives, telling us so plainly the great and fundamental truths. We should not think of architecture solely in terms of building, but remember that it had real value as one of the many aids to the formation of fine character. Architects had a great responsibility, for their work helped to raise or lower the standard of life; they were doing and should be enabled to do more to raise it if the people were taught that architecture was vital to their well-being.

Discussion.

Mr. R. F. Cholmeley, C.B.E., M.A., proposing a vote of thanks, said he was grateful to the President for his observations on the place of architecture in life—not merely its technicalities, but what it meant to the ordinary person who was trying to get into an educated state of mind. He believed that something was being done in the schools, especially the older public schools, to bring home to the boys the inspiring nature of the buildings among which they lived, and he thought that a great deal was done in the London schools to teach what architecture meant. The houses that some people built inclined him to despair, but he did not think it was fair to put it all down to the iniquities of the speculative builder. We must make people thoroughly dissatisfied with buildings that were out of proportion and overloaded with ornament. Unless we made people thoroughly angry about it we should not get far. We had to stir up a divine discontent with anything but the best. It was no question of expense. Some of the worst buildings were the most expensive, and some of the best the least. Beauty was one of the necessities of life, and the cheapest to obtain, if only we set about it in the right way.

Professor W. Rothenstein, M.A., in seconding the motion, commented upon the fact that many successful men in other walks of life began as architects. There was the case of Thomas Hardy, for instance; and among the moderns, Eric Gill, Gimson, and many other excellent artists began as architects.

The President, having briefly replied to the vote of thanks, then presented the medals and prizes for 1928.

(Full details of these awards were given in our issue for January 13.)

At the commencement of the proceedings the meeting, on the motion of the hon. secretary, passed a resolution of sympathy and condolence with the relatives of the late Mr. Thomas Hardy.

New Essex County Offices, Chelmsford.

The General Purposes Committee has submitted plans for the provision of the new County Offices at Chelmsford. The Council has recommended that the committee be authorised to invite tenders for the work and to accept a tender if within the estimated cost of £91,000.

"THE BUILDER" DEBATE

Articled Pupilage versus School Training.

[In our issue for January 13 we gave "Positive's" first article on this subject, and last week "Negative's" reply. We now give "Positive's" rejoinder. The subject is now open to general discussion, and we shall be glad to have the views of our readers for publication next week, when the debate will be concluded.—ED.]

SIR,—"Negative" has written such an able reply to my defence of the pupilage system that it is easily understood that he can be little satisfied with the name under which he has, perforce, to write. I am, however, aware that, as he says, the system I am defending "in nearly every country in the world is coming more and more to be considered obsolete," and for that very reason I am at once happy in my point of view and in my *nom de plume*. It seems to me so much more "positive" to cut across the current of accepted practice than to drift comfortably but perilously with the stream. At any rate, I am glad to exercise the privilege of debating practice in replying to the amendment, and so enjoying a knowledge in advance of the point of attack, as "Negative" has also had.

There are two points which I should like to put right, and which "Negative" has misunderstood, largely because I had not made them sufficiently clear. The first is, that though the academic course I received was of three years' duration, I did follow it up with some industry by a further four years of evening classes, and probably spent in all a more extended course of academic training than the average "five-year" student enjoys. I mention this point because I cannot admit that I am ignorant of either side of the question.

The second point is that I was actually aware of that stipulation for at least one year's practical experience which governs qualification as Associate R.I.B.A., following the receiving of a Diploma at a recognised School of Architecture. I did not mention this in the first place, because it seemed, and still seems, a very trivial reservation; in fact, I consider that it further strengthens my case, by showing such a cynical disregard of the true proportions of the case.

This second point serves as a very useful jumping-off point to my argument. In reviewing the relative careers of the articled pupil and the school-trained pupil, I think I am not unfairly translating the words of "Negative" in assuming that he anticipates that the latter will not have arrived at a stage of proficiency in practical knowledge until three years after the completion of his academic course, for he says: "At the end of a further three years, however (*i.e.*, after the five-year course), the school-trained student has acquired the knowledge of routine work, and he acquires in three years *almost* as much knowledge of this subject as his articled rival has gained in five." The emphasis to the "almost" is my own, though the whole statement is perhaps significant enough without it. What it amounts to is this: that an enthusiastic supporter of the school system admits that after eight years' training the school-trained student is rather less proficient in the practical knowledge of architectural practice than is an articled pupil after only five years' training! The admission is serious in so far as one values the importance of practical knowledge in the matter of building, but it is doubly serious when in another paragraph the same writer defends the system which permits the school student to graduate as an Associate after *six* years' training only—five at a school and one in an office.

While we are on the point we may as well consider what the degree of Associate is intended to signify. Is it only a sign of academic knowledge, and recognised as such by the general public; or should it show a proficiency in practice which the general public may trust? If the former is correct, then I can only say that the degree is entirely redundant, since the Schools and Universities may very well make use of their own domestic degrees for this purpose. If the latter, then it has obviously become a sheer deception—unfair to the public, unfair to those who laboured through their Final on the understanding that it was a test and a sign of general proficiency, and unfair to the student, who finds himself in an ill-fitting man's suit before he has grown into it.

To me it appears only too manifest that the ordinance which first permitted this state of affairs was designed under the direct inspiration of the school authorities, for the express purpose of inducing parents and guardians to send their sons through the easy gate to miss the hedge and ditch into which many a straight rider has tumbled. Viewing it in this way, I am forced to the conclusion that there is much too irresponsible a spirit permeating the school system for it to be healthy or right.

I may be unjust in describing such an intention as of deliberate design, but I do believe it rests somewhere in the sub-conscience of the scholastic enthusiast, and I must admit that I distrust the whole scholastic system of to-day. I believe that it is gradually becoming to be regarded as a universe in itself, instead of no more than an ante-room to the universe. Many a secondary-school trained man of yesterday, complete with his differential calculus, advanced book-keeping, and what not, stops and wonders in what way he is better educated than his father, who learned the three "R's" thoroughly and little else. Many an architectural school-trained man of to-morrow will pause and discover that he is little better equipped to build in sound and seemly fashion than was the man of like experience in the days of Norman Shaw. Then it may be that some wise man will realise that the one career for which the schoolmaster thoroughly trains his students is that of the schoolmaster, and that for a decade or more we have been vigorously holding ourselves up by our waistbelts.

"Negative" speaks with some contempt of the abilities as a teacher of the average practitioner. I suppose very few of them would be accepted as such in the average architectural school. His knowledge of the correct curriculum would be nil, as also of the right jargon in which to discuss architectural fitness. But I do not consider this disqualifies him as a teacher of architecture. The average architect in practice *is* a teacher, whether he takes pupils or not. He has to train a team to execute a co-ordinate task, and he has to educate his clients, more often than not, as to the things that are good for them. Into this purpose the direction of a pupil's training falls naturally into place, and the boy who cannot make use of it in an office populated by talented assistants had better leave the profession altogether. It must be a well-chosen office, of course, but there are certainly sufficient busy, sound offices to train all the young architects of the next generation.

I am also called over the coals for attributing the glut of students and young assistants to the growth of the schools, and an R.I.B.A. report dated in 1925 is brought up against me. I must confess that I have not read this report, or if I have I have forgotten it. What I do know, however, is that whereas the great boom in building had not long passed at that date, and was being followed by a corresponding depression, the schools have continued to build new classrooms, indicating to my mind a sublime indifference to the current conditions ruling in the profession.

Finally I am told that "the system of the office and the evening school can never be a real success," and that "the stress of work nowadays makes it practically impossible, for reasons of health alone, for the articled pupil to carry out his office work conscientiously and at the same time spend his even-

ings in the necessarily exhausting work of the atelier." Now may I ask in what way the life of the articled pupil of to-day in the office is more strenuous than that of his predecessor of yesterday? For the assistant on salary, possibly it is, but for the pupil I cannot for the life of me see in what way he is adversely affected. He is there primarily to learn, not to be driven, and if properly treated by his principal, and having a proper regard for his own position, he will have as much leisure in which to look round as any pupil of a past generation had, and probably much more to see when he does look round than had he of the more peaceful age. The evening school is not a continuation of work—not "overtime"; it is a relaxation to any youth who has learned to love his work. Far from this joint system never being a real success, it is the one under which most of the great figures of the late nineteenth century were trained; in fact, most of the professors of architecture were so trained!

It is, as I have said, a hard grind. There is far less time for theatres and tennis than the school student can afford, and it is but a parallel with the relative effort which students, young and old, put into their studies to-day and yesterday. Those who are satisfied that the children of to-day are as well equipped for the hard knocks of life as were our fathers may well be complaisant. For my own part, I am inclined to think that we who laboured to scrawl John Bull's letters on a slate were less shocked to find that life is not all an organised game than will the little ones who are supposed to be learning without knowing it.

I can see the pen of "Negative" poised to write the word REACTION. Well, sometimes we have to go back where we came from before we can find the right road.

"POSITIVE."

MEETINGS

MONDAY, *January* 30.

Architectural Association. Mr. Robert Atkinson on "Architectural Books." 7.30 p.m.

Edinburgh Architectural Association. Mr. A. E. Considine on "Legal Aspect of Building." 8 p.m.

TUESDAY, *January* 31.

Architecture Club. Dinner. Savoy Hotel. 7.30 p.m.

College of Estate Management. Mr. G. Mould on "The Landlord and Tenant Bill." 5.30 p.m.

WEDNESDAY, *February* 1.

Royal Institute of British Architects. Mr. C. H. B. Quennell on "House Building through the Centuries." 8 p.m.

L.C.C. Central School of Arts and Crafts. Sir Banister Fletcher on "The Mediæval Period: Piers, Towers, Spires, and Roofs." 6 p.m.

Leeds and West Yorkshire Architectural Society. Discussion on "That Architecture is Art, not a Business," by Messrs. F. W. H. Allison and V. Bain. At Leeds. 6.30 p.m.

London Society. Visit to the Church of St. Mary-le-Bow, Cheapside. 2.30 p.m.

Incorporated Institute of British Decorators. Debate on "Painting of Plasters and Cements, New and Old." At Painters' Hall, E.C. 7.30 p.m.

THURSDAY, *February* 2.

Victoria and Albert Museum. Mr. M. J. Hanc (Secretary at the Czechoslovak Legation) on "Industrial Art in Czechoslovakia." 5.30 p.m.

Institution of Structural Engineers. Discussion on "Types of Reinforcement." Introduced by Mr. H. C. J. Carrington. At Birmingham Chamber of Commerce. 7 p.m.

Auctioneers' and Estate Agents' Institute. Mr. G. Mould on "Landlord and Tenant Act, 1927." 7.30 p.m.

Northern Polytechnic. Mr. M. S. Briggs on "Story of the Architect." 7 p.m.

FRIDAY, *February* 3.

Faculty of Architectural Surveyors. Annual Dinner. Hotel Metropole, W.C.2. 7 p.m.

ILLUSTRATIONS

Stretford Boys' Secondary School.

This school, which is nearing completion, is being erected for the Lancashire Education Committee from plans prepared in the office of the County Architect, Mr. Stephen Wilkinson, A.F.C., F.R.I.B.A., Preston Accommodation is provided at present for 380 scholars, with future extensions for 470. The buildings are faced with rustic bricks with stone dressings, the arches being in sand-faced bricks. Window openings throughout are fitted with metal casements in wood frames, by Messrs. Helliwell & Co., of Brigham, Yorks. The roofs are covered with Coniston green slates laid in diminishing courses. Fireproof floors are being laid by Messrs. Homan & Rogers, of Manchester and London. The school will be heated on the low-pressure hot-water system.

Messrs. Joseph Chapman & Sons (Patricroft), Ltd., are the general contractors.

Rotherham Technical College.

The second premiated design in this competition follows broadly the lines of the scheme placed first. A central entrance on the upper ground floor gives access to classrooms and administrative offices and affords a means of approach to the assembly hall, below which workshops are placed. Classrooms, laboratories and the school of art are placed on the upper floors, and ample exits are arranged from each floor level. An entrance into the lower ground floor is arranged at the lowest portion of the site to afford a ready means of access for heavy machinery and equipment that may be required in the workshops. The ventilation has been specially considered; extract ducts are placed along the corridors at the high level connected to an uptake shaft, terminating in a fleche at roof level. The material proposed to be used was brick with stone dressings, and red Roman roof tiling.

The design is by Messrs. F. J. Horth & H. Andrew, FF.R.I.B.A.

We also illustrate the third premiated design, by Messrs. Collcutt & Hamp. In this scheme an endeavour was made to utilise the available area to its fullest extent, and in this respect the various frontage lines were accepted and used as the controlling factors. Special regard was also had to the possibility of future extensions being required, and an effort was made to give these a dignified architectural form in sympathy with the remainder of the scheme. The desirability for direct light and ventilation to all internal corridors was given due consideration, as also suitable and adequate lighting of the engineering workshops. It was proposed to carry out the elevations in local stone.

"Old Court," Wimbledon.

This house has been built for Mr. S. V. Gruchy, in a picturesque setting of silver birch and mountain ash, overlooking the Wimbledon golf links. The surroundings, although only 25 minutes from the West End, are very rural and might be right in the country. The house, designed to blend with these surroundings, is built with Claygate bricks, supplied by Messrs. W. H. Brown (Leatherhead), Ltd. The casements and leaded lights were supplied by Messrs. George Wragge, Ltd. The oak throughout is finished a silver shade, and wax polished.

Mr. Edgar Ranger was the architect.

The Church of St. George, Bulford Camp.

In 1913 sketch designs for a church at Bulford Camp were under consideration, but before anything beyond these preliminaries had been dealt with the war began, and further progress had to be postponed. Throughout the war Bulford and the neighbouring camps saw a continuous flood of troops from home and abroad pass through this great training centre, and when peace at last came, it was felt that the most fitting memorial that could be erected would be a church.

Arising out of the greatly increased cost of both materials and labour, and the feeling that the purpose of the memorial called for suitable expression and the avoidance of inferior materials or a cheaper form of construction than that adopted, it became necessary to carry out the work in sections. The foundation stone was laid by Lord Methuen in the autumn of 1920, and on St. George's day, 1923, the nave was dedicated by the Chaplain-General, Bishop Taylor Smith. Three years elapsed before operations could be resumed, the work being completed and dedicated by the Bishop of Salisbury on November 3rd, 1927.

The completed church has cost approximately £21,000, of which £2,000 still remains to be collected. About three-fourths of the total was collected and subscribed by soldiers and their friends, in addition to gifts of furniture as separate memorials, and a window executed by Mr. W. T. Camm, of Smethwick, presented by the officers of the Royal Artillery, "To the Glory of God and in memory of the Officers, N.C.O.'s, and men of the Royal Artillery, who gave their lives in the Great War, 1914-1918." In the centre light is the Risen Lord, flanked by saints protagonist, with predella panels of heraldic work. Small medallion subjects delicately treated, add interest and colour in the heads of the side lights, the traceried head bearing the regimental badge and motto—the cinque-foils having the men's cap badge—on a blue field of much variety in depth of colour. The church owes much to the energy of the Archdeacon of Sarum, in its inception and completion.

Owing to the impossibility of obtaining tenders for the work at the outset, the building has largely been erected on a "time and material" basis, by Messrs Mitchell and Sons, of Woodfalls, Salisbury, except the stonework, which has been supplied by The Bath and Portland Stone Firms, Ltd., from the designs and details of the architect, Mr. G. L. W. Blount, F.R.I.A.I., of 5, Duke Street, Adelphi, and Mitre Chambers, Salisbury.

The plan is cruciform, the north and south transepts being arranged to provide a small side chapel with band loft over, the organ opposite having the choir vestry and lavatory under. The band loft is reached by a circular stair, which continues to the tower room, the steps being of reinforced concrete cast *in situ*.

The sanctuary is furnished with a two stall sedilia, a piscina and an aumbry—as parts of the fabric—the altar, pulpit, choir stalls, etc., being carried out in brown oak. The church is of Bath stone throughout, except the walls, which are hearted with fine Portland cement concrete between an outer and inner lining four inches in thickness. The walls and foundations are in part steel reinforced, as are also the flat ceilings of the aisles and the concrete to floors of band loft, organ loft and tower room, which—with the nave—are of oak blocks. The crossing has a groined ceiling with carved boss and corbels, the ceilings of nave, etc., being plastered and divided into panels by oak trusses, ribs and purlins. The roofs, including that of the steeple, are covered in with Precelly slates in graduated courses, the autumnal tints harmonising with the Bath stone and the surrounding downs.

The other principal contractors and firms associated with the church were: Messrs. W. H. Gaze and Sons, Kingston-on-Thames, foundations; G. N. Haden and Sons, Trowbridge, heating; Stanley Cooper and Co., Bournemouth, electric lighting; Mr. W. T. Camm, Smethwick, lead glazing and R.A. memorial window; Hollis Bros., Leicester, woodblock flooring to nave; The Sarum Wrought Iron Works, The Canal, Salisbury, wrought ironwork; The Stratford-on-Avon Guild, Stratford-upon-Avon, cast lead gutters and heads; Noyes and Green, Salisbury, carved pulpit, stalls, etc.; Carter and Co., Poole, Dorset, floor tiling in chancel. The organ is the gift of the Carnegie trust, and is by Sweetland, of Bath.

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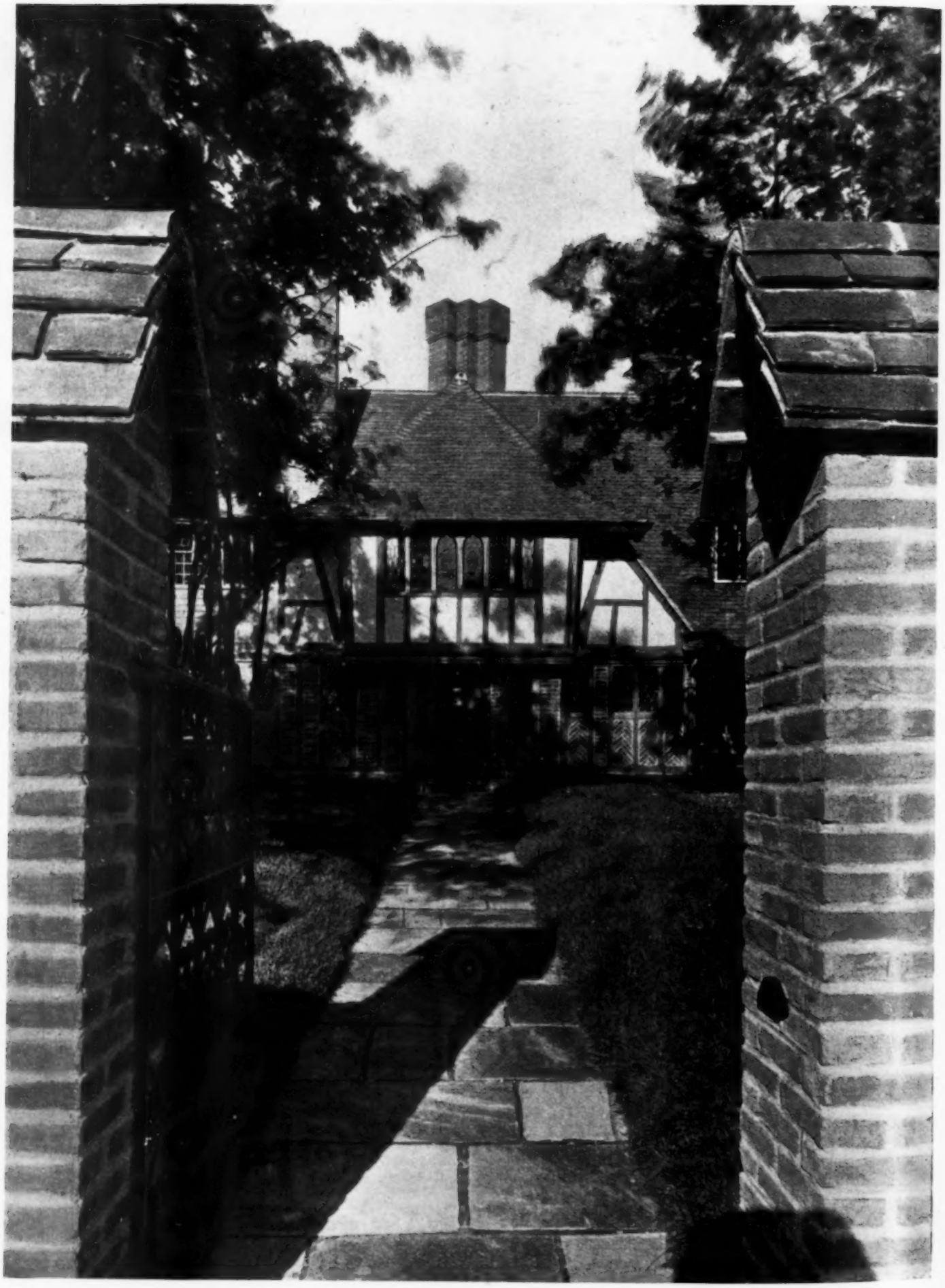
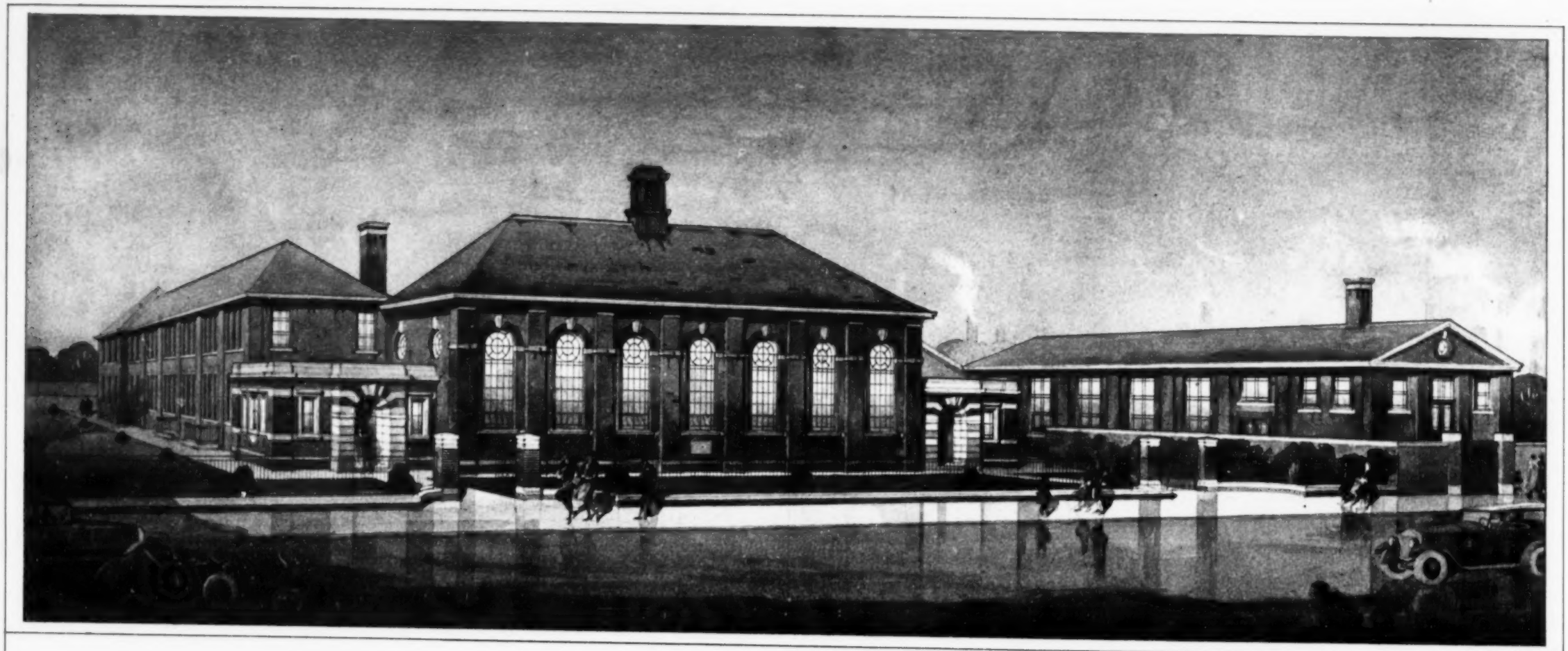
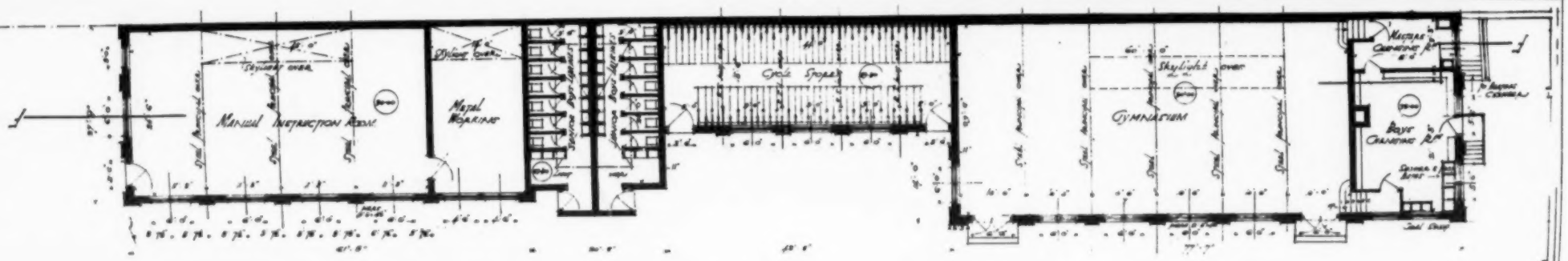


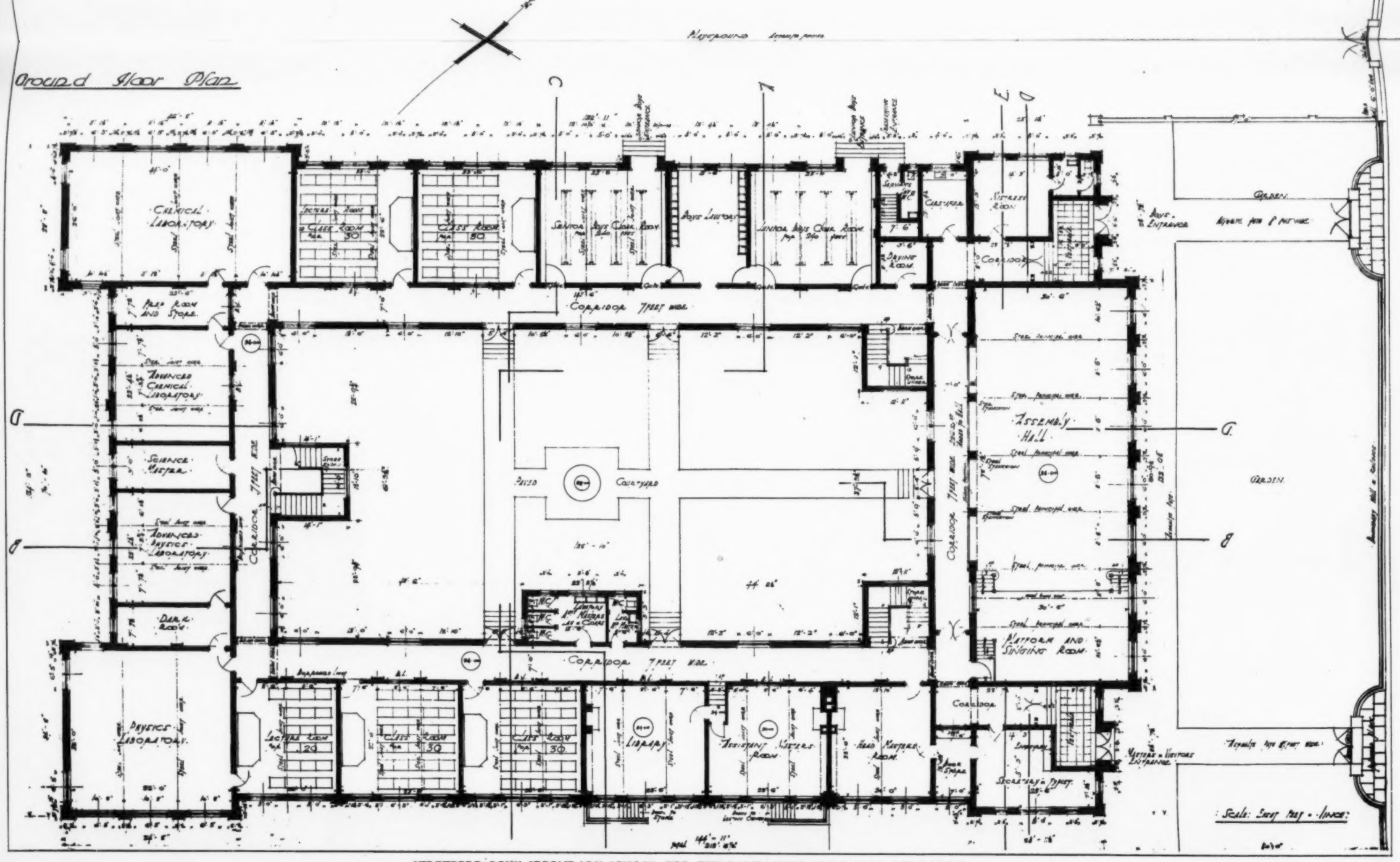
"The Old Court," Wimbledon: View from Entrance Gateway.

MR. EDGAR RANGER, Architect.

UNIV. OF MICH.

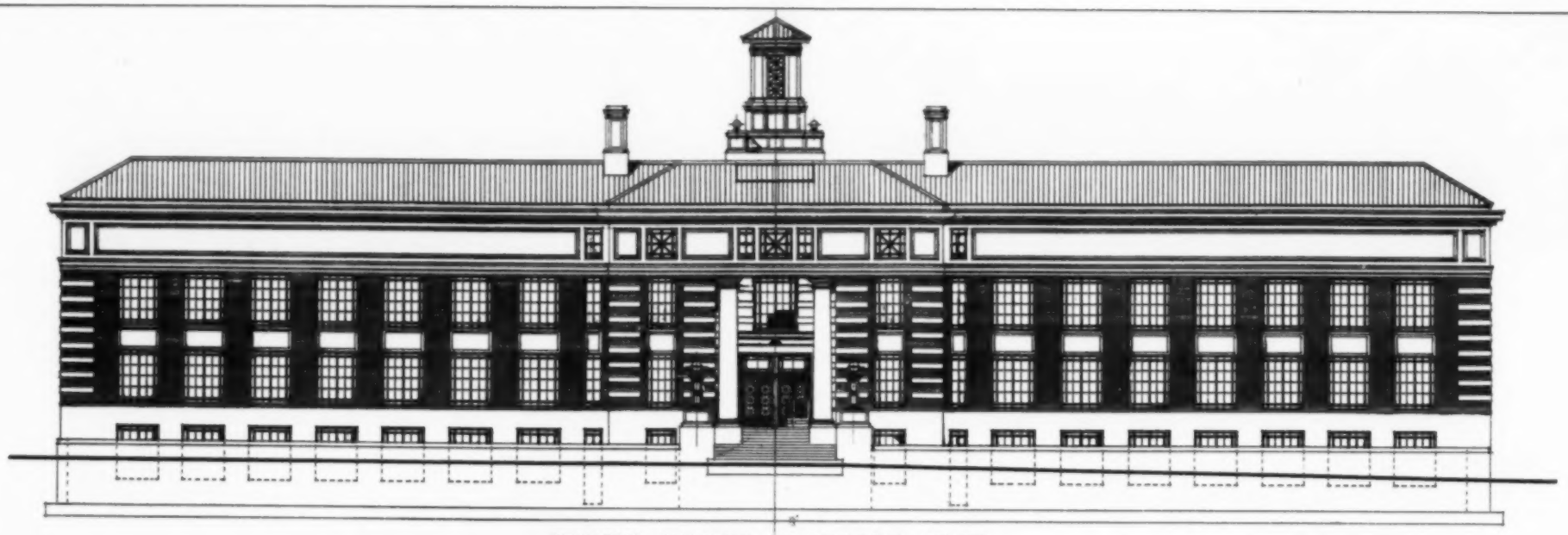



Manual Instruction Room
Metal Working
Gymnasium
Skylight over
Boys' Changing Rm.
Masters' Changing Rm.

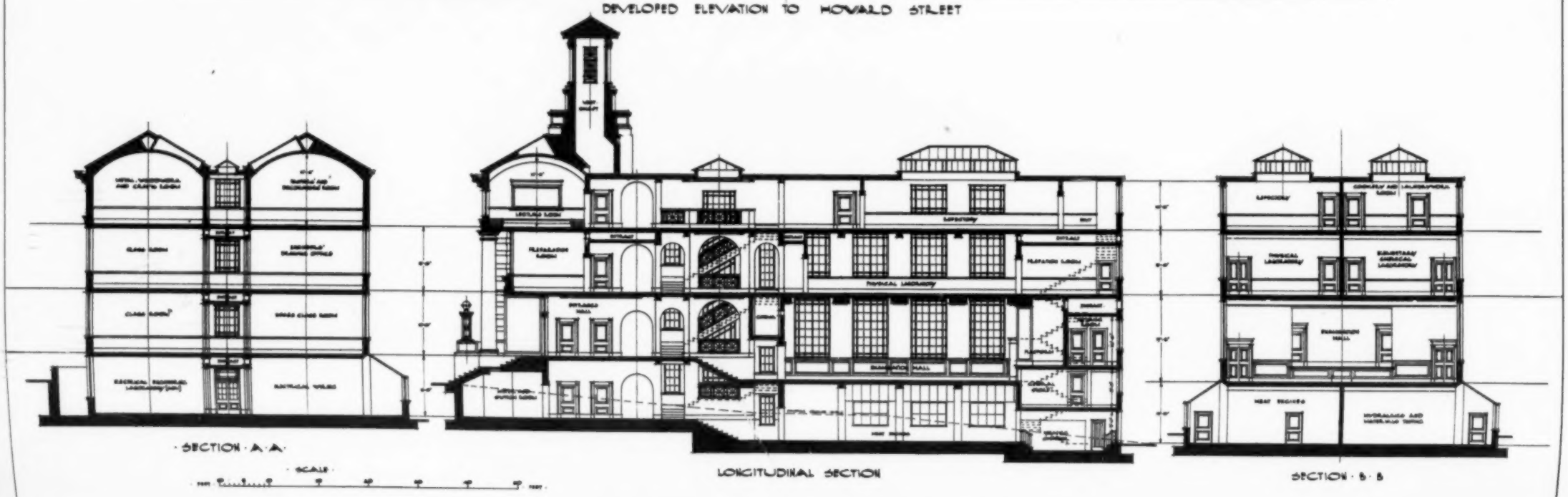


STRETFORD BOYS' SECONDARY SCHOOL, FOR THE LANCASHIRE EDUCATION COMMITTEE.

Mr. Stephen Wilkinson, F.R.I.B.A., County Architect.



DEVELOPED ELEVATION TO HOVALD STREET



· SECTION · A·A ·

· SCALE ·

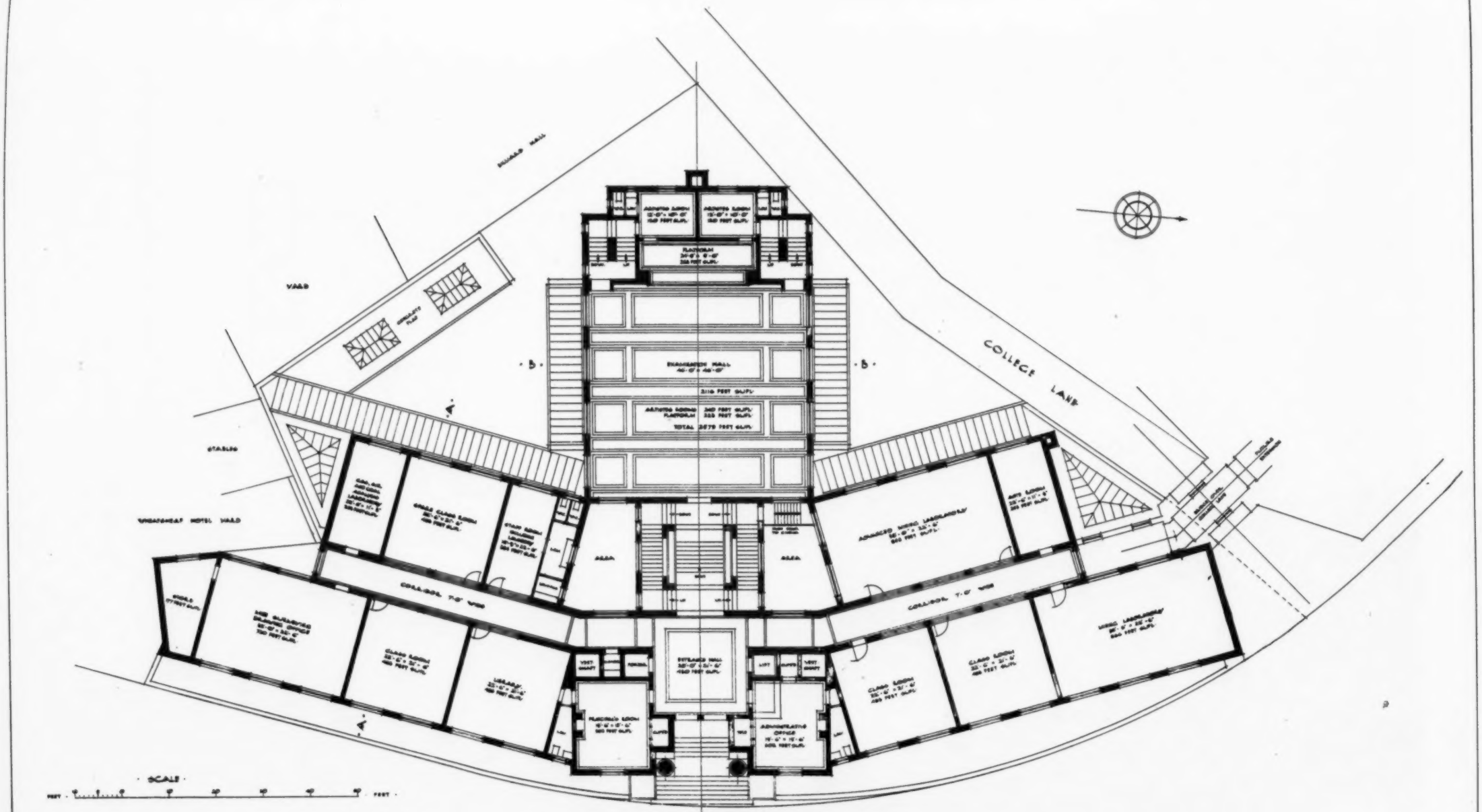
LONGITUDINAL SECTION

SECTION · B · B

· TECHNICAL COLLEGE · ROTHERHAM ·

THE BUILDER, JANUARY

· TECHNICAL COLLEGE · ROTHERHAM ·



UPPER GROUND FLOOR PLAN

ROTHERHAM TECHNICAL COLLEGE COMPETITION: SECOND PREMIATED DESIGN.

By Messrs. F. J. Horth & H. Andrew, FF.R.I.B.A.

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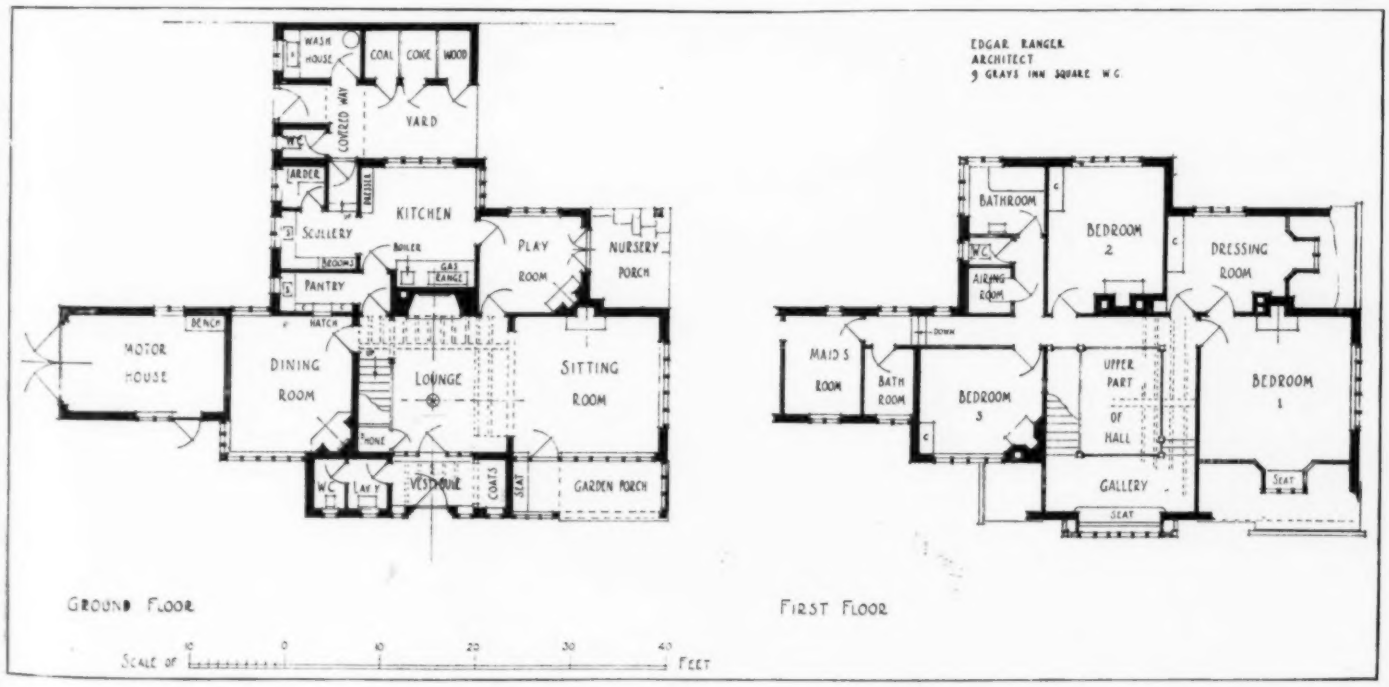
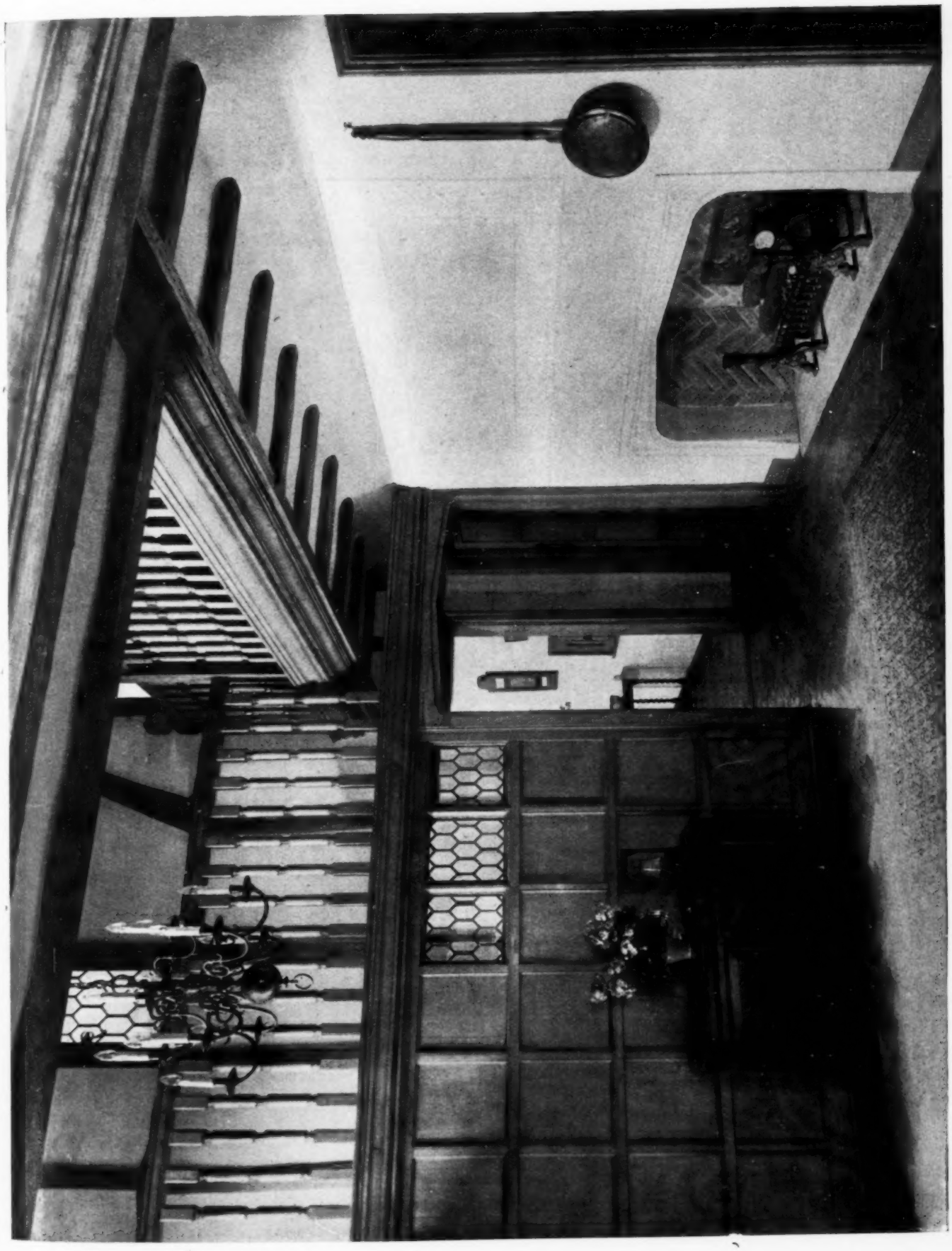
ENTRANCE FRONT.



"The Old Court," Wimbledon.

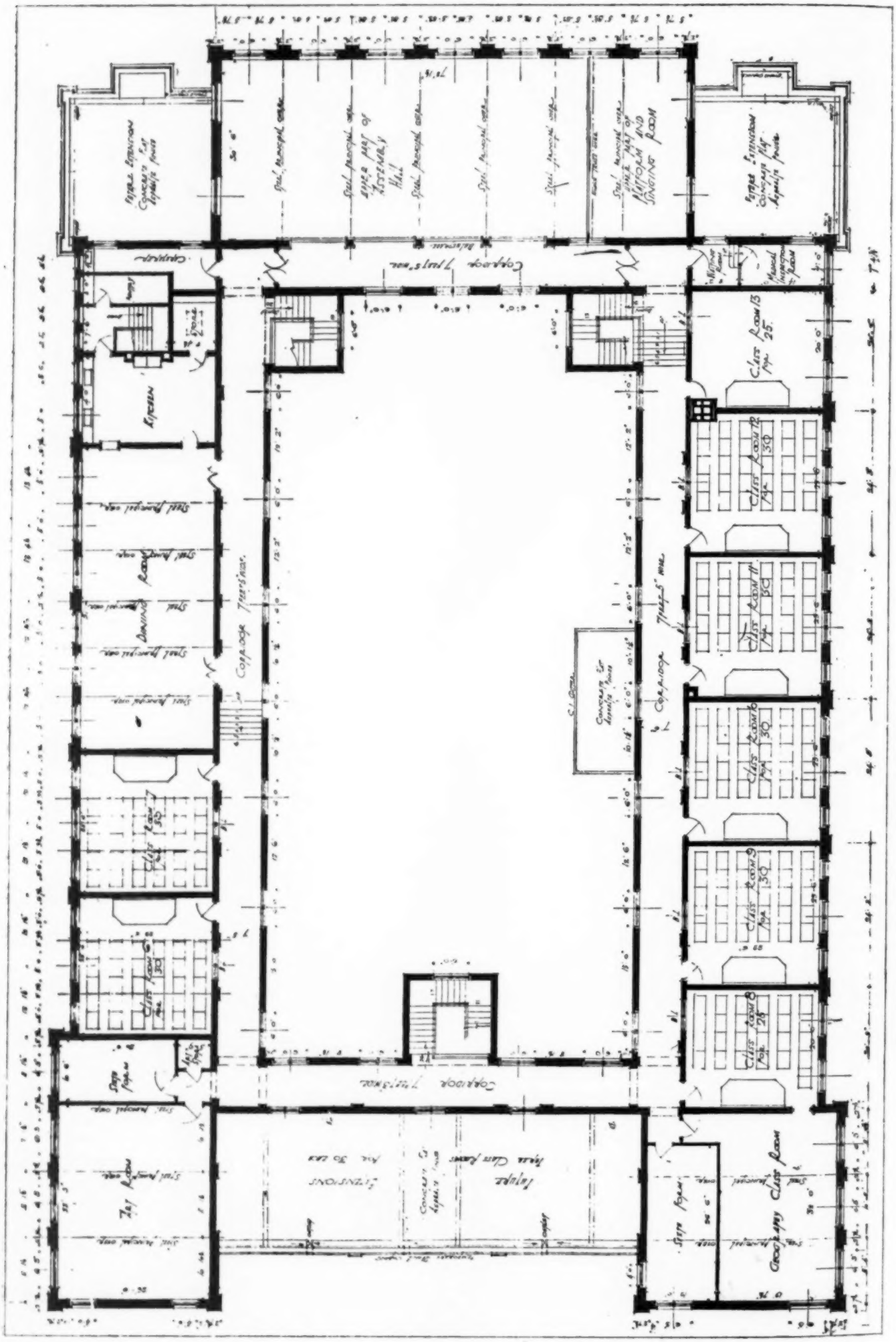
MR. EDGAR RANGER, Architect.

UNIV. OF MICH.



"The Old Court," Wimbledon : The Lounge.

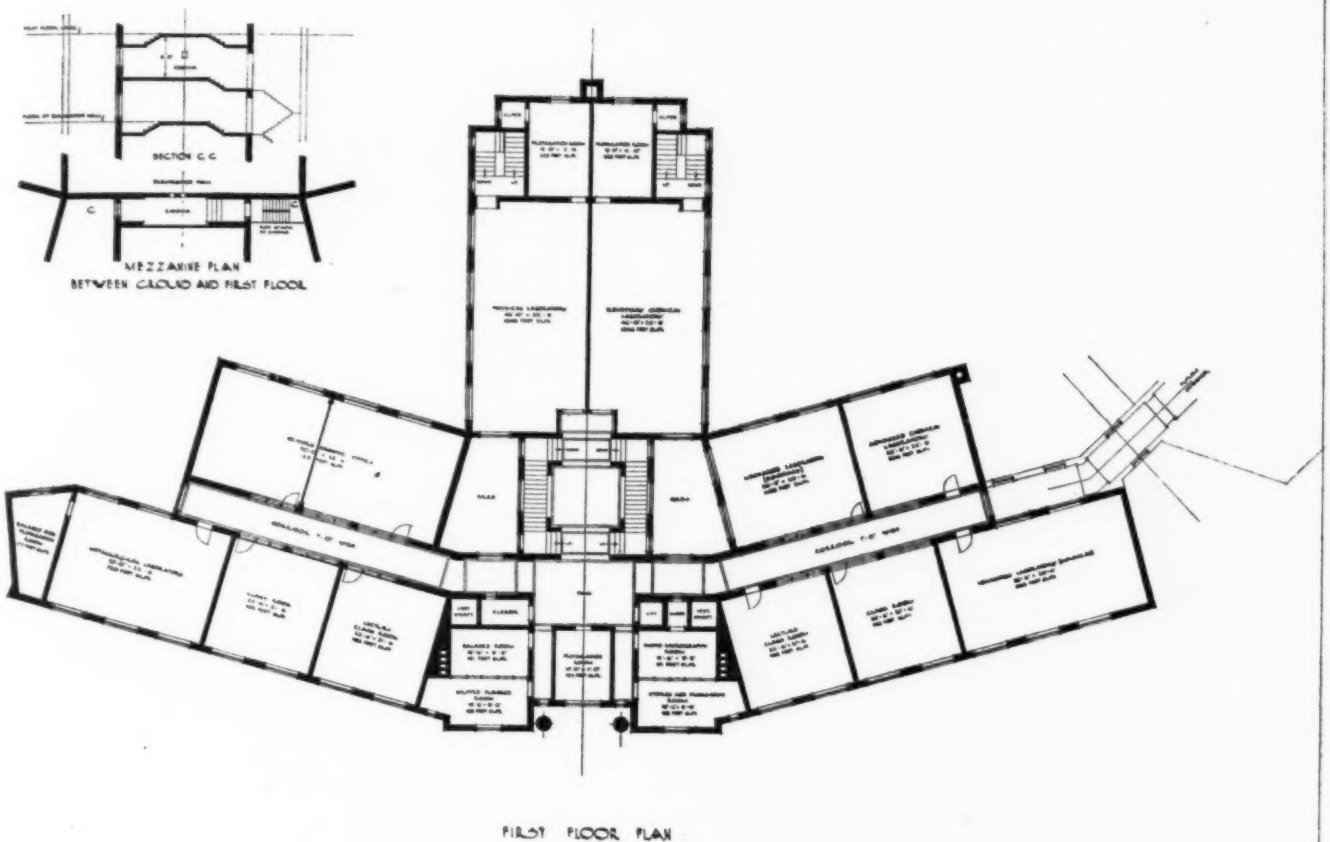
MR. EDGAR RANGER, Architect.



Stretford Boys' Secondary School, for the Lancashire Education Committee: First-floor Plan.

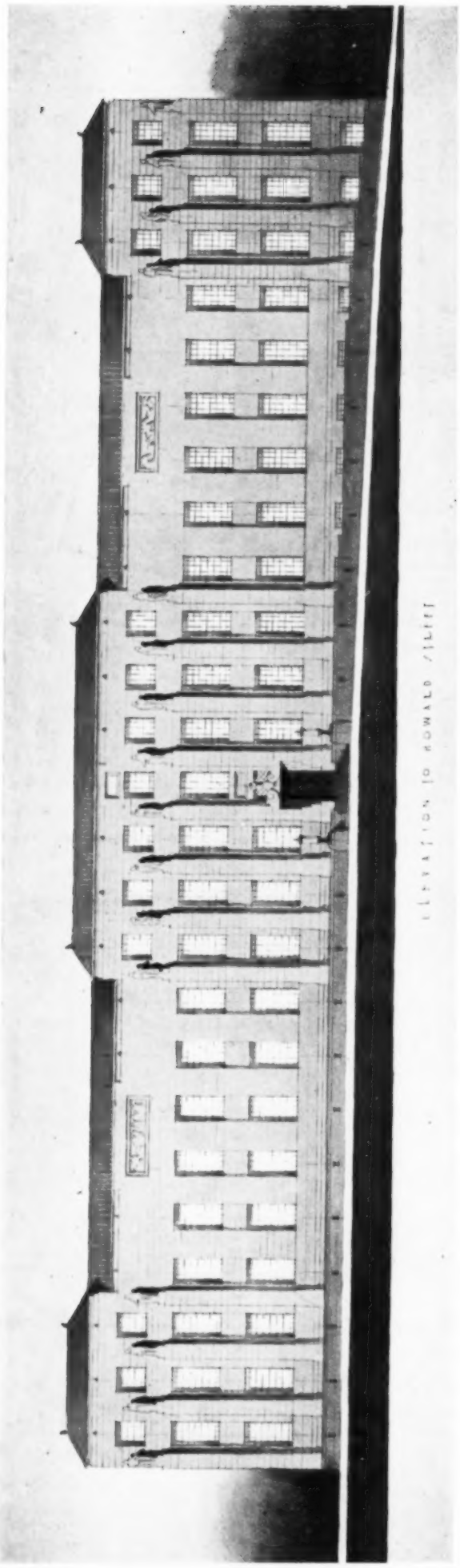
MR. STEPHEN WILKINSON, F.R.I.B.A., County Architect.

· TECHNICAL COLLEGE · ROTHERHAM ·

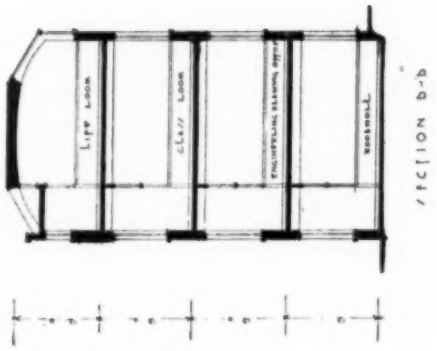


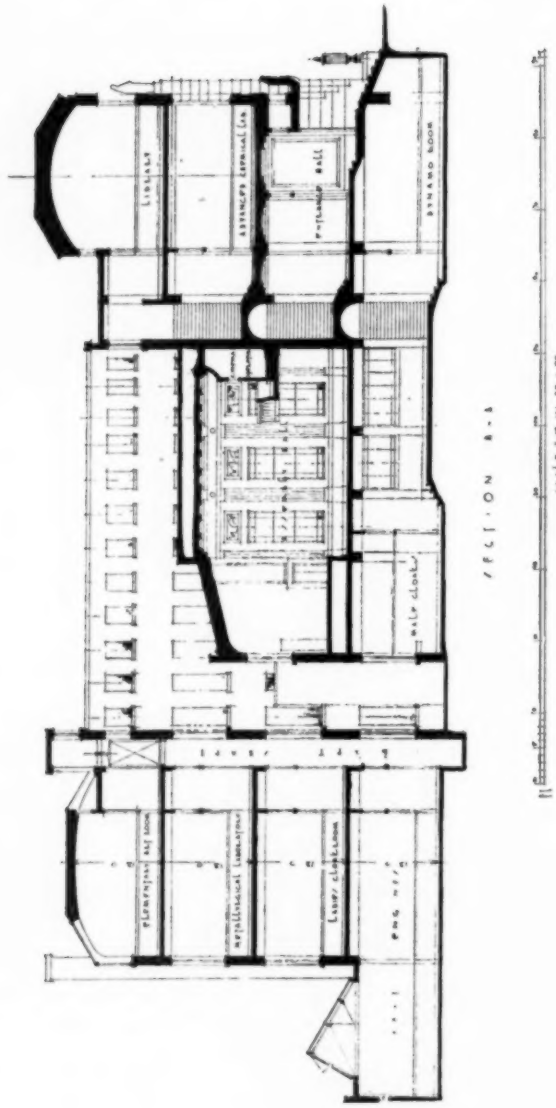
Rotherham Technical College Competition: Second Premiated Design.

By MESSRS. F. J. HORTH and H. ANDREW, FF.R.I.B.A.



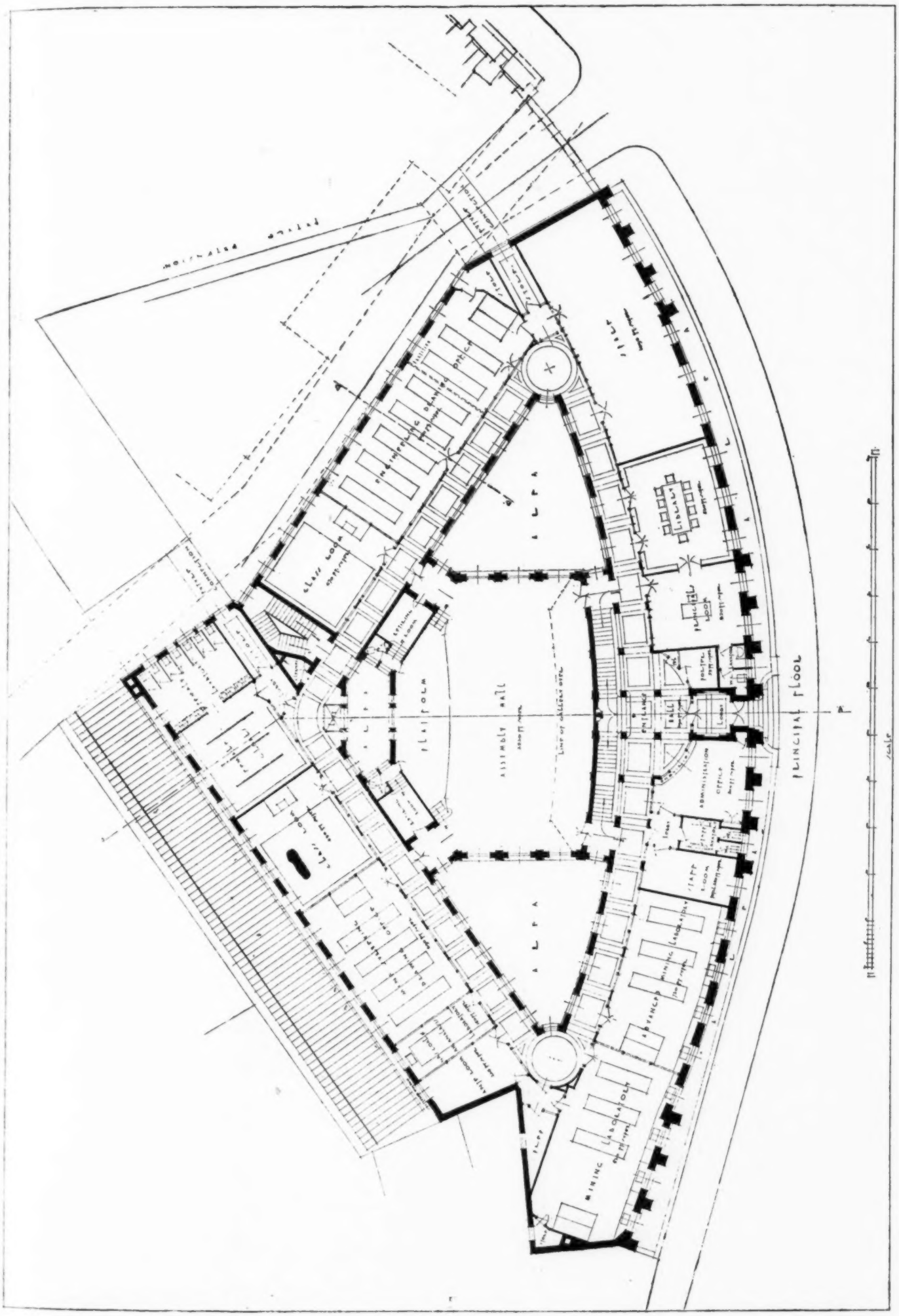
ELEVATION TO ROWALD STREET





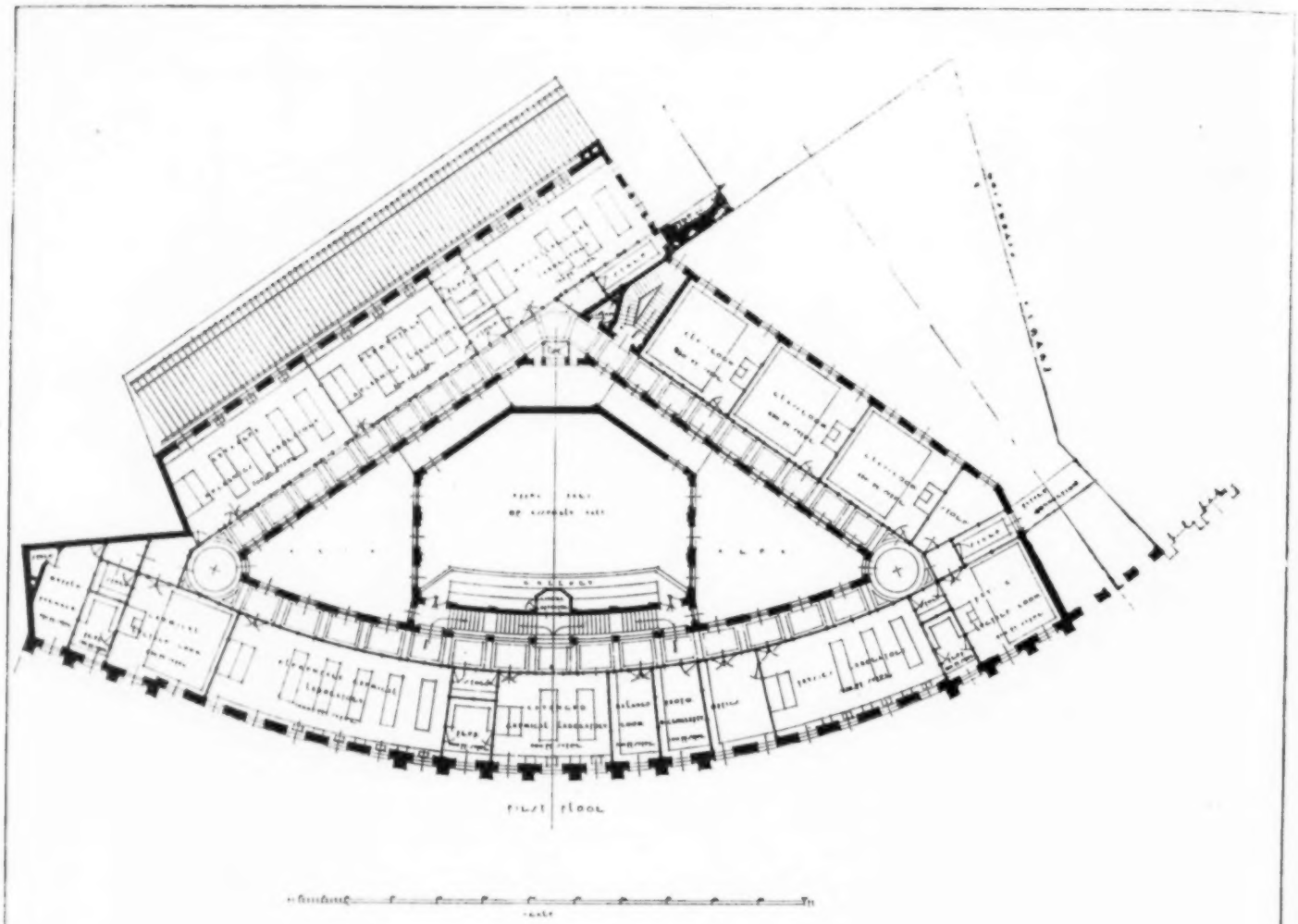
Rotherham Technical College Competition: Third Premiated Design.

By Messrs. Collcutt and Hamp.



Rotherham Technical College Competition : Third Premiated Design.

By MESSRS. COLLCUTT and HAMP.



Rotherham Technical College Competition: Third Premiated Design.

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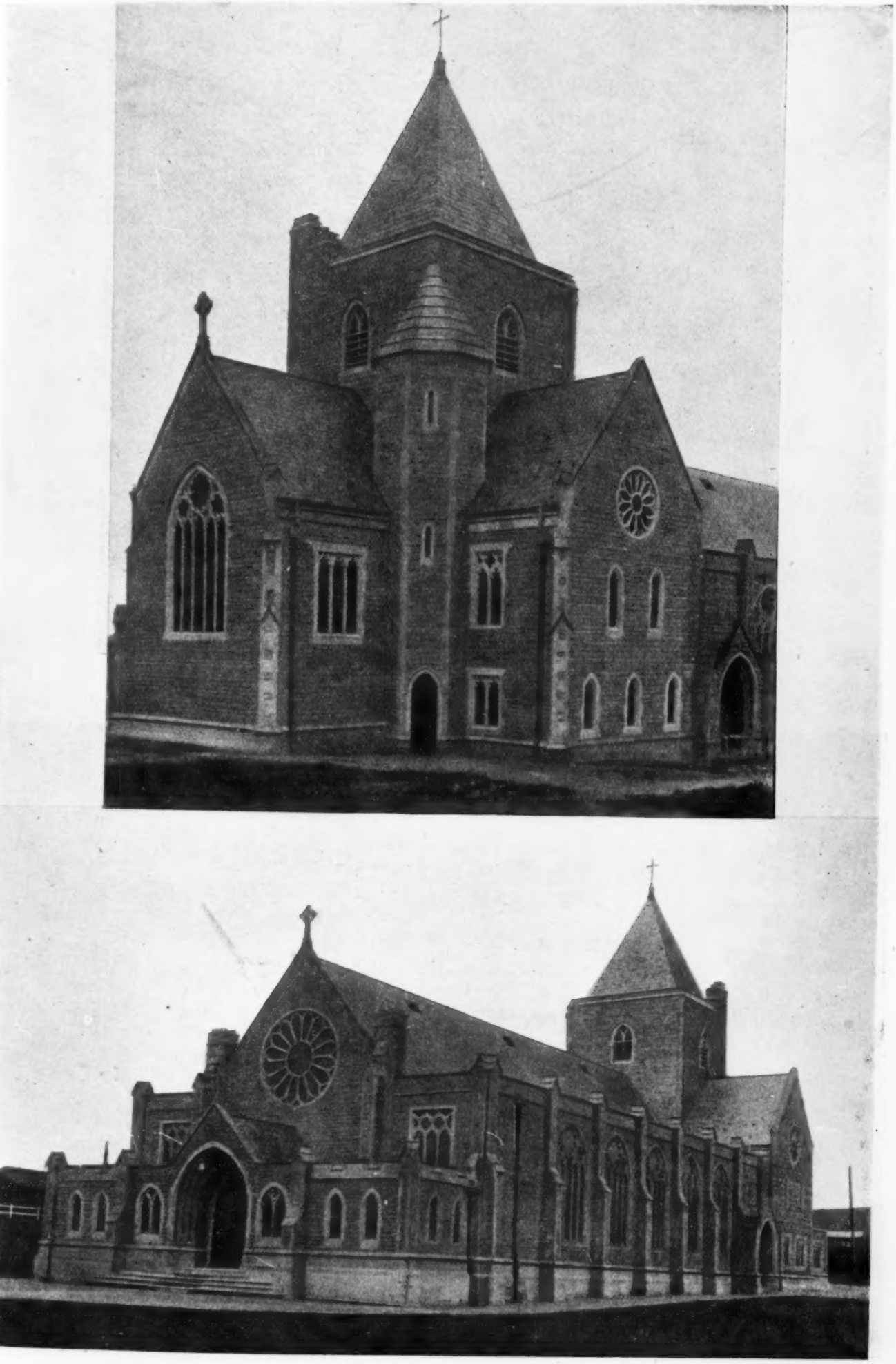


Garrison Church, Bulford.

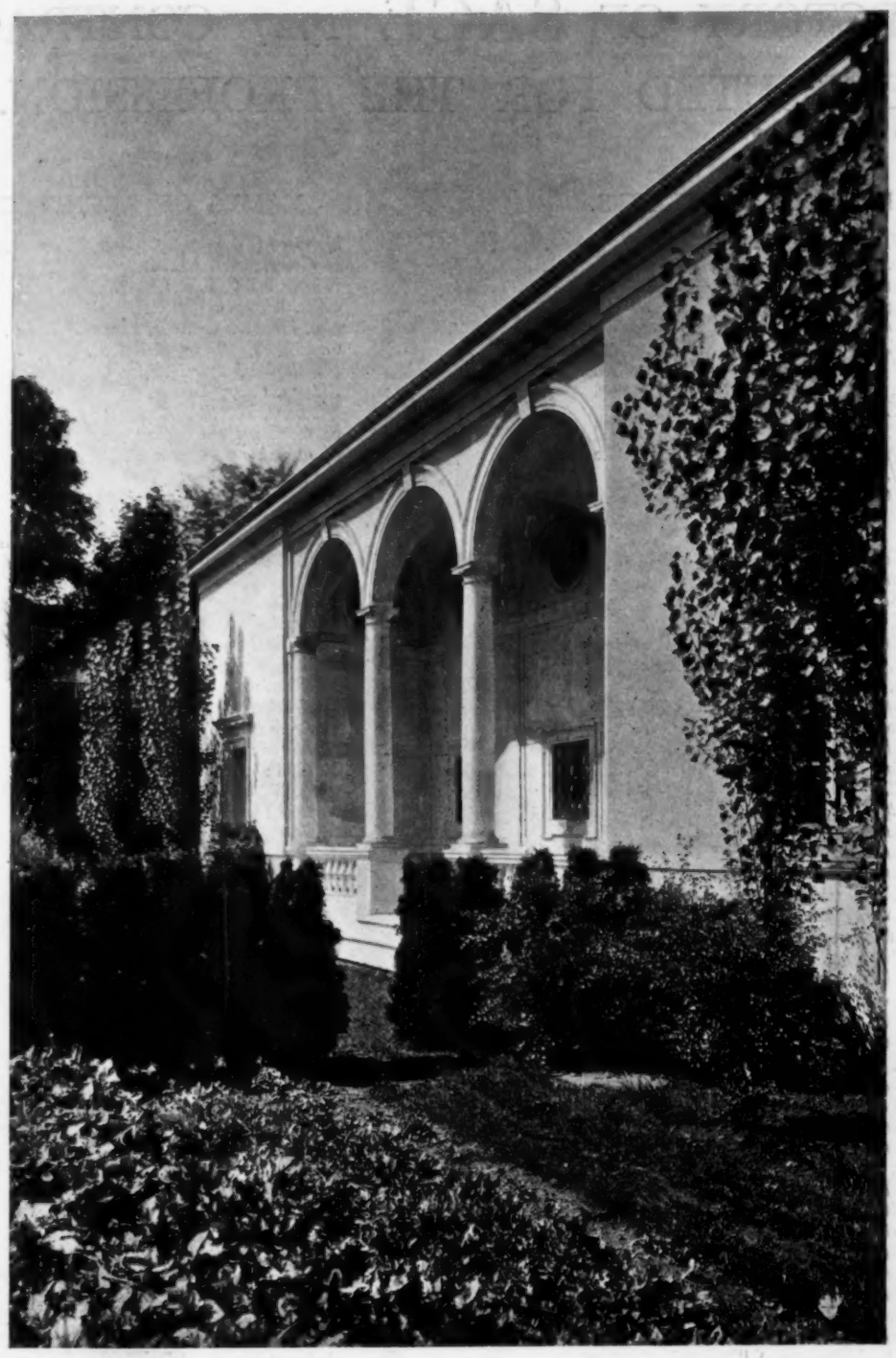
MR. G. L. W. BLOUNT, F.R.I.A.I., Architect.

The Nave, Looking East.

View from North Aisle.

Garrison Church, Bulford.

Mr. G. L. W. Blount, F.R.I.A.I., Architect.



Colour effect plays a not insignificant part in architectural beauty. Colour content must, however, be of permanence to commend itself to high-class architecture. Effects such as that shown in the illustration on this page, obtained by the use of "Atlas White" and a coarse white silica sand, are truly permanent. Assurance of the lasting quality of "Atlas White" stucco lies in the fact that "Atlas White" is a true Portland cement of the highest grade—the standard by which all other makes are measured. It possesses the full tensile strength and lasting properties of the best standard Portland cement. I issue "Stucco Specifications," which make specifying high-grade "Atlas White" stucco a very simple matter. Write for a copy.

Regent House,
Regent Street,
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Frederic Toleman

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John Barker & Co., Ltd., Kensington, W.8	*B. George, A.R.I.B.A.*
Blackpool Co-operative Society, Ltd., Blackpool	*Walter Wade, L.R.I.B.A.*
Booth Bros., Bellingham	*Chas. Waymouth, F.R.I.B.A.*
Brill's Scotch Bakeries, Edgware	*Geo. Hubbard & Sons, F. & A.R.I.B.A., M.A.*
Buttericks, Ltd., Regent Street, W.1.	*G. Alan Fortescue, A.R.I.B.A.*
Malcolm Campbell (London 1927), Ltd., St. James's Street, S.W.1	*Harold Goslett, A.R.I.B.A.*
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Eaden Lilley & Co., Ltd., Cambridge	*Geo. B. Banyard, L.S.A.*
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Edwin Evans & Sons, Morden	*Edwin Evans & Sons.*
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David Greig, Ltd., Margate	*P. Woollatt Home, F.S.I.*
David Greig, Ltd., Reading	*P. Woollatt Home, F.S.I.*
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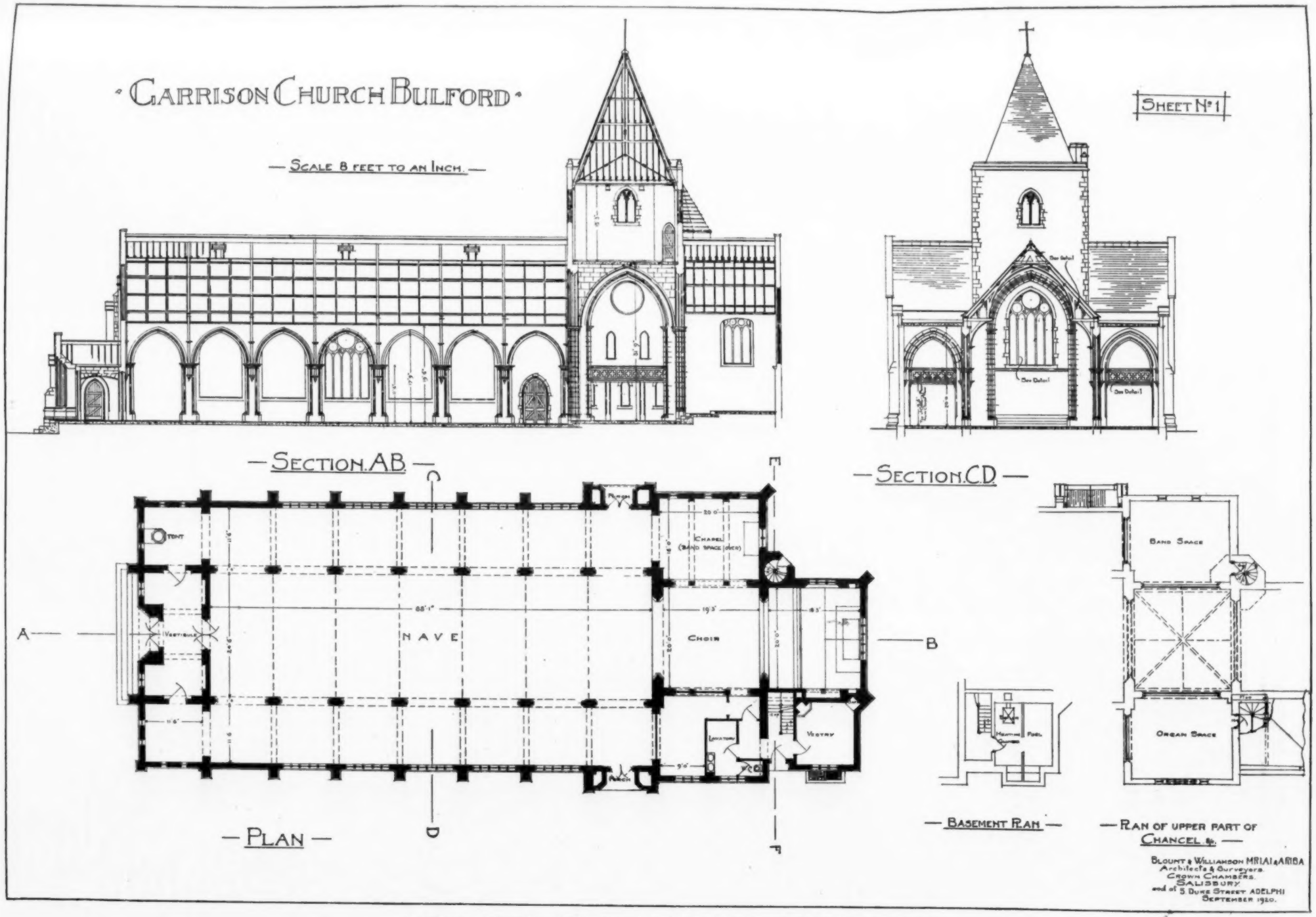

Garrison Church, Bulford. MR. G. L. W. BLOUNT, F.R.I.A.I., Architect.

LEGAL QUESTIONS WE HAVE BEEN ASKED—III

By W. T. CRESWELL, Barrister-at-Law, L.R.I.B.A., Associate (late Fellow) Surveyors' Institution, etc.

WHAT IS THE POSITION OF THE ARCHITECT IN A BUILDING CONTRACT?

THE architect is the recognised agent of the employer, and his position in relation to a building contract is mainly, if not altogether, governed by the law of agency.

If any person in the rôle of employer instructs an architect to act in his behalf in a professional capacity, he in effect authorises the architect to answer for and to represent him as his agent; but the employer at the same time is as "principal" answerable to others for all the architect does within the scope of the authority thus delegated. Such authority may be express or implied; and, in the case of an architect, the authority, more often than not, is implied, in that in giving him instructions the employer takes for granted that the ordinary customs of his profession will be followed.

The legal status of an architect is that of "general" agent for the employer; a contract of agency being set up between them immediately the architect negotiates with others thereon. In all instances, whether the architect's certificate of completion is to be final or open to review, he should count himself as a "general" agent whose function is to perform and obey the lawful instructions of his employer, and to realise that he has a duty towards both parties. Further, that in case of dispute between the employer and contractor his intervention is that of a *quasi* arbitrator, not solely that of agent to the employer.

The relation of agency referred to exists by reason of the express or implied assent thereto of both the employer and the architect. The assent of the employer is implied, by his engaging the services of one who, according to the ordinary usages of mankind, occupies a position in which he is understood to have the employer's authority to act on his behalf. The assent of the architect is implied immediately he acts, or assumes to act, on behalf of the employer. Having once so acted, or assumed to act, he cannot deny that the agency existed, or that he acted or assumed to act on his employer's behalf

Scope of Architect's Authority.

The functions of an architect as a general agent are fairly well known; but his authority may be limited or extended by specific covenants or clauses in an individual contract; and these limitations or extensions can only be established by reference to the text of the contract. In Betts *v.* Pickford (1906) 75 L.J., Ch. 483, Kekewich, J., said "I apprehend his authority is strictly limited by the nature of his employment; that is to say, as defined by any letters or agreement constituting his employment."

Of course, an employer may subsequently ratify as having been done on his behalf acts of the architect which are without the scope of his authority. But even then the employer may refuse liability and throw the onus on the architect if he was not informed of the additional cost, if any, to be incurred *before* the variation for extra is begun.

The most perfect type of agency is where the agent *acts and contracts* in the name of his principal; in which case it is the principal alone who is responsible to third persons, and is entitled to sue them in respect to the acts of his agent.

Primarily, as a general agent, an architect is agent to his employer in respect of the preparation of drawings, obtaining tenders for, and superintending to conclusion, all building works entrusted to him by his employer. A mere designer or draughtsman is not an agent but an employee.

The relationship of agency does not impose upon an architect any obligation to do a wrongful act at the wish of his employer; nor does it discharge him from any liability therefor. He has no implied authority to enter into a contract with the contractor for the works proposed, even though a tender received from the latter is within the approximate estimate or price approved by the employer. Nor may he contract himself, personally, or he will pledge his own credit, and maybe that of his employer also.

When obtaining tenders, or, indeed, at any time, an architect is not entitled in his rôle of agent to warrant to the contractor that the drawings, etc., are correct, or that the work contemplated can be in fact carried out in accordance with them; nor must he enter into any secret arrangements with the contractor to cut down the cost. Also when errors and omissions have appeared in the documents, which as agent he sent out on the employer's behalf, he has no authority to rectify those omissions, even if they are necessary for the completion of the work by ordering them as "extras" under any power he has in the contract to order bona-fide "extras." Or, again, if the drawings he has furnished are impracticable, he cannot order "extra" additional work to overcome the difficulty.

No Authority to Alter, Vary or Waive a Contract.

As an agent, an architect has no general authority to alter, vary or waive any part of the contract between his employer and the contractor, unless he is authorised to do so. Not even to the extent of permitting the substitution of other labour and materials for those specified in the contract, even if the labour and materials substituted are an improvement on those provided in the contract. In Sharpe *v.* The San Paulo Railway Co. (1873), 8 Ch., App. 597, the plaintiff was constructing a railway for the defendants, and their contract provided that the engineer's certificate should be in writing. It was held, that the plaintiffs could not maintain a claim against the defendants merely on oral promises given by the engineer. Lord Romilly, M.R., said: "It was quite clear that the engineer had no power to vary the contract; he had power to give directions . . . . within the limits of the contract, and if the contractors thought that things were not within the contract, they were not bound to do them."

If an architect is authorised to vary the contract, such variations as are ordered by him must come within the terms of the contract and must be ordered *in writing* if the contract so provides. He cannot, however, for any reason at his own discretion vary the whole scheme of the contract; any variation ordered by him under the powers given him by the contract must be for work obviously resulting in an improvement on work originally contemplated.

Employing a Quantity Surveyor.

As agent of the employer the architect has no general authority to employ a quantity surveyor at the cost of the employer, though this act has been recognised on more than one occasion by the Court as sanctioned by custom. It is not safe to rely on custom, however; he should obtain the express instructions of his employer.

Dismissing the Contractor.

Unless he has the power expressly assigned to him by the employer, an architect has no authority to dismiss the contractor or terminate the contract.

Certifying.

An architect exceeding his authority as general agent may render himself liable for breach of warranty of authority. If his act is wilful or fraudulent then he is liable for deceit. Over-certifying for payment on account, or error in settling the amount to be certified, is negligence. Failing to certify the full amount to which the contractor is entitled under the terms of the contract may, in certain circumstances, be regarded as fraud.

There are those, however, who honestly believe that an architect stands towards his employer in quite a different relation from that of an ordinary agent in any commercial transaction. The reason for this belief is elusive and intriguing. They admit, of course, that the final certificate, and adjustment of accounts, must be a matter of actuarial exactness; yet, in practice, regard a progress or interim certificate as merely an approximate valuation; as something for the contractor to carry on with, until the final adjustment. In fact, it might almost be said that they claim an architect is a privileged agent holding a sort of financial "Indulgence" from the employer, which "Indulgence" is called in before the adjustment of accounts, when he becomes a *quasi* arbitrator if his certificate is to be final, and not liable for negligence.

In the recent case of Wisbech R.D.C. *v.* Ward, Sankey, J., in the Court of first instance, decided that an architect, some of whose interim certificates had resulted in his employers having paid both the contractor and the Disposals Board for the same material, was, as the agent of the employers, liable for negligence. On appeal, however, this decision was reversed. In this instance it must be clearly understood the contract held a clause which sought definitely to lessen the usual effect of the architect's progress or interim certificates. The Court of Appeal decided, *on the facts*, that the architect had not been negligent; differing from Sankey, J., merely in the view they took of those facts. The question of liability for negligence did not therefore arise, and it is regretted by many that a decision was not given as to the liability of an architect in issuing progress or interim certificates, and, further, that the decision of Sankey, J., as to that liability was not reversed so as to make an architect's position in issuing a progress or interim certificate the same as that in issuing a final certificate; in respect of which, he is no doubt not liable for negligence.

The new Form of Contract, recently settled, endeavours to fall into line with the decisions in Case Law, and seeks to determine the position of the architect. It gives him "complete control" of the work, and gives finality to all his decisions; and when those decisions are given on request of the parties to the contract, they are binding; though, if disputed, they are subject to the determination of an independent arbitrator.

THE MAKERS OF ENGLAND.

SIR BANISTER FLETCHER, F.S.A., F.R.I.B.A., recently commenced the second term of University Extension Lectures on Mediæval Architecture at the Central School of Arts and Crafts, Southampton-row, W.C.1, by a discourse on the earliest, or pre-mediæval architecture of England, dealing in turn with the work of the ancient Britons, the Romans, and the Anglo-Saxons. He indicated some of the influences which have moulded our architecture, and showed how the activities and civilisations of these earlier periods played a great part in the conditioning of Norman and Gothic architecture.

The Roman occupation, the lecturer pointed out, changed the face of England. The Romans made roads through it, such as Watling Street and Fosse Way; they built walls against invasion, such as those of Hadrian and Antoninus; founded walled cities, such as York and London; built thermæ, or baths; amphitheatres, such as Caerleon and Dorchester; villas with central heating, and lighthouses, like the Pharos at Dover. The arrival of Christianity was evidenced later, not only in the conversion of kings and their subjects, but in the building of Anglo-Saxon churches and in bishoprics. Thus again during the Saxon period the scene was changed by the erection of many churches, like that now standing at Bradford-on-Avon. Religious zeal reached a climax in Edward the Confessor.

LEGAL SECTION

NOTES ON CURRENT CASES

Workmen's Compensation and the Condition of the Labour Market.

THE Court of Appeal has recently considered four cases where men who had been injured by accident and had been engaged in light work were applying for compensation because the light work upon which they had been engaged was no longer available, owing to conditions in the labour market.

The four cases are Lewis *v.* Guest, Keen and Nettlefold; Watkins *v.* the Same; Tucker *v.* the Same, and Ingram *v.* Crawshay Bros. (Cyfartha), Ltd., and they are reported 1928, 1 K.B. 20. In all four cases the County Court judge sitting as arbitrator had decided against the claims. The judgments delivered in the Court of Appeal are very complicated, involving a reference to numerous cases, and we can only endeavour to give a summary of the effect of the decisions. All the cases were very similar as to the facts: the men had been injured by accident and had subsequently been given light work by their employers, which had come to an end owing to industrial conditions, but none of the men were what we think has very unfortunately been termed "odd lots," which means that their injured condition would be such that they are only competent to undertake very special and limited jobs and are treated as wholly incapacitated unless proof can be given of an offer of such work (see Palmer *v.* Crawshay Bros. (Weekly Notes, May 29, 1926)), a case in which the Court of Appeal adopted the dictum of Lord Justice Fletcher Moulton (as he then was) given in the case Cardiff Corporation *v.* Hall (1911, 1 K.B. 1009; *The Builder*, June 2, 1911), as to this class of injured men.

In Lewis's case the accident had happened October 6, 1904, and subsequently he had been given light work, which terminated in September, 1924, when the pit was closed for economic reasons. In September, 1925, he had commenced proceedings based on permanent partial incapacity, but the case had stood over pending a decision in the Court of Appeal, which it was supposed would affect his case. His application was heard in October, 1926, and the County Court judge decided against his claim. Watkins' case was much the same; he was injured in 1908, and after 1910 received under a registered memorandum certain compensation and was given light work, which terminated on May 2, 1926, owing to the general strike, and he was claiming a review of the weekly payments.

Tucker was injured in 1913; he was subsequently in the Army, but in 1924 was given light work, which with a break was continued until 1925, when he took proceedings, which were dismissed, but a declaration of liability was made. The present proceedings were for a review of this decision. The facts in this case were characterised as obscure. Ingram was injured in 1917, was given light work until for economic reasons the pit was closed in October,1924, when under an agreement he was paid 4s. a week compensation. He was claiming a review of this agreement, and in all the cases the County Court judge decided against the claims on the ground, apparently, broadly speaking, that no loss was shown due to incapacity, as the men would have been out of employment in any event.

All the cases except that of Lewis came within the Workmen's Compensation Act, 1906. Lewis's case was wrongly treated by the County Court judge as falling within that Act, but it really fell under the previous Act, 1897, as the accident happened in October, 1904. The Court of Appeal allowed the appeals in all four cases and remitted them for compensation to be assessed on the principles laid down in these judgments, and we will endeavour to summarise those principles.

The points decided appear to fall under the following headings. In the cases where a review was applied for, had there been a change of circumstances? For if there has been no change of circumstances, the award cannot be reopened? (Pope and Pearson, Ltd., *v.* Gamble, 1923, 16 B.W.C.C. 157). If physical disability is proved, does the intervention of another cause depriving the workman of wage-earning opportunity deprive him of the right to compensation? We have already stated that the men were not "odd lots," but were capable of light work without that limitation.

The right to compensation is given by section 1 of the Act and is not cut down by the Schedule (Portland Colliery *v.* Murray, 1923, A.C. 566; *The Builder*, December 28, 1923). The Schedule directs how the quantum is to be arrived at and fixes certain maxima, but subject to such maxima in the case of partial incapacity the weekly payment shall in no case exceed the difference between the average of the weekly wages before the accident, and what the man is able to earn after the accident, "but shall bear such relation to the amount of that difference as under the circumstances may appear proper" (Schedule I., par. (3)).

It is now established that a review can be demanded even if the physical condition of the man remains the same if further events have placed a different complexion upon the case, which will bear upon his injured condition in the labour market (McAlinden *v.* James Nimmo and Co., 1920, A.C. 39; *The Builder*, March 26, 1920; Macdonald *v.* Wilsons Clyde Coal Co., 1923, A.C. 566, and Portland Colliery Co. *v.* Murray *ubi sup*), and although apart from the man's physical condition changes in the labour market cannot be taken into consideration either on an original application or a review (Cardiff Corporation *v.* Hall, 1911, 1 K.B. 1009; *The Builder*, June 2, 1911; Gaffney *v.* Chorley Colliery Co., 15 B.W.C.C. 158), in considering what the difference is between pre-accident earnings and what the man is able to earn after the accident and the amount to be awarded, a rise or fall in wages becomes a material element to be considered (Woodilee Coal and Coke Co. *v.* McNeill, 1918, A.C. 43; *The Builder*, December 21, 1917) under the discretionary power set out above at the end of paragraph (3) Schedule I. As to the expression "able to earn," see Heathcote *v.* Haunchwood Collieries, 1918, A.C. 52; *The Builder*, April 5, 1918.

The above principles having been laid down as established led the Court to consider the finding of the judge below, that no compensation was due because the men would have been out of employment owing to the economic conditions prevailing, and here it was pointed out that the judge had not considered those cases where the loss of wages may be due to either of two independent causes; that is to say, where the injury is one cause but another supervenes. Lord Justice Scrutton summarised those cases commencing with Harwood *v.* Wyken Colliery (1913, 2 K.B. 158), where a workman was permanently disabled by an injury to his knee and after being paid compensation for some time he was discovered also to be disabled by heart disease, and it was held that if the accident by itself would cause the loss of wages the intervention of this second cause would not deprive him of the right to compensation.

The cases were remitted with the following directions:—Watkins, being partially disabled by the accident and completely prevented from earning by the consequences of the strike on the labour market, could not obtain compensation for the total incapacity due to the latter cause, but was entitled to compensation in respect of the partial incapacity, the compensation being (subject to the prescribed maxima) the difference between his earning capacity as a sound man and his earning capacity in some suitable work as a disabled man only capable of any kind of light work, for he was not an odd lot. But if it should be found that, at the period at which the Court was asked to review, but for the strike and its effects he was capable of earning in spite of his injury more than his pre-accident wages then from the decision in Bromley and Drew *v.* Staveley Iron and Steel Co (*ubi sup*) he would be disentitled to the compensation to which he would otherwise be entitled. The directions in the cases of Tucker and Ingram were the same as the above. Lewis's case fell under the Act of 1897. The discretionary words we have set out above in Schedule I., par. (3) are absent in Schedule 8, par. (2) of the former Act, yet the judge had acted under those discretionary words. The case was remitted with similar directions as above.

Lord Justice Scrutton at the end of his judgment drew attention to the position of men who are not "odd lot" men, because their physical condition was such that they are capable of any kind of light work and yet are not likely to obtain such work, as all light jobs are reserved by employers for their own compensation cases, under the above decisions on this point, which are all decisions of the Court of Appeal, and suggested that it would be very useful if the House of Lords, which is not bound by these decisions, could throw any light on the matter. He also referred to the practice when a strike occurs of the light-job men not sending in notices but waiting for a time and then demanding work which they knew could not be forthcoming and claiming compensation for total incapacity. As regards the first point, there is now a new provision in the Act of 1924, section 9, subsection (4), which may or may not meet the case of that class of man, but it is by no means satisfactorily worded. It is "If a workman who has so far recovered from the injury as to be fit for employment of a certain kind proves to the satisfaction of the judge of the County Court that he has taken all reasonable steps to obtain, and has failed to obtain such employment, and that his failure to obtain such employment is a consequence wholly or mainly of the injury, the judge shall order that his incapacity shall, for the purposes of this Act, continue to be treated as total incapacity for such period and subject to such conditions as may be provided by the order, without prejudice, however, to the right of review conferred by this Act: provided every such order shall be made subject to the condition that it shall cease to be in force if the workman receives unemployment benefit"

The very vague expression "employment of a certain kind" probably was intended to include only the men now known as "odd men" and not men found fit for any kind of light work, or it may be construed to include the latter class, and a decision of the Court of Appeal will be of interest on this subsection.

As regards the second point, the decision in the cases we have been considering seems to make it clear that the light-job men in the circumstances indicated could certainly only claim compensation for partial incapacity, but a point not raised in the above cases (as it was not argued that any of the men were implicated directly in any strike) appears to remain uncertain, and that is what degree of connection with a strike will deprive a man who has been injured and is employed by the same employers on light work of his right to compensation as a partially incapacitated man.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting—ED.

Standard Sizes of Bricks.

SIR,—The fashion of making 2 in. bricks for facings appears to be on the increase, and there is no doubt that the texture of this depth of brick is far happier than the thicker brick. Unfortunately the bricklayer uses more or less the same effort to raise the work 2 in. which he would use to raise it 3 in. with a standard brick. Is there any reason why the 2 in. facings should not be made an additional length so as to make up a similar bulk for the bricklayer to lay in one process? If this were possible I feel sure there would be a tendency towards the wider use of the 2 in. brick, and probably in time the ordinary common brick would follow in the same size and so greatly simplify the bonding-in of facings and backing.

BRICKS.

Artificial Marbles.

SIR,—I would like to get in touch with firms manufacturing artificial marbles at a low price in comparison with the real thing. The type of marble must not be simply a surface treatment liable to damage, and must be capable of being worked down and re-polished if necessary. ECONOMY.

Damp Stains on Inside Wall.

SIR,—I shall be grateful if anyone can suggest a remedy for damp stains on an inside wall. They extend in blotches on a surface about a yard wide down the three top floors of the house. The kitchen chimney is immediately behind this wall; it is not used, as a gas cooker and gas circulator were installed four years ago, but the vent flues of both these open into the chimney. The stack has been recently cemented and there is no fault in the roof. It has been suggested that the stains result from combustion of the gas fumes. Is this possible?

G. B. P.

Cleaning White Marble Hearths.

[REPLY TO J. & CO., JANUARY 13.]

SIR,—If querists do not wish to place the work in the hands of an expert marble mason they cannot do better than try an application of a thin paste of fullers earth and water with 25 per cent. of liquid ammonia added, or a mixture of chloride of lime. Cover the whole of the work to be cleaned with these mixtures and allow same to remain for at least twenty-four hours. Then wash off with clean water. If all the stains are not removed, the process should be repeated. These mixtures will not injure the marble.

FRANK JAY.

Measuring Openings.

[REPLY TO MR. J. M. FIFE, JANUARY 20.]

SIR.—With reference to a method of measuring for painting sashes, etc., I was told some time ago that it was the practice in Yorkshire, and I believe in other districts of the north, in measuring walling to give a number—"Extra for forming openings." This does not, of course, bear on the method of measuring painting, but raises an interesting departure from southern practice. Can any of your readers say as to whether this is correct? ABSTRACT.

Door Construction.

SIR,—What are the relative advantages and disadvantages of the ordinary tenoned door and the imported dowelled door? Is there any danger of the latter shrinking at the shoulders and actually showing daylight through? 19TH CENTURY.

SOCIETIES AND INSTITUTIONS

R.I.B.A.

The Final Examination.

The Final Examination qualifying for candidature as Associate R.I.B.A. was held in London and Edinburgh from December 7 to 15, 1927. Of the 48 candidates examined (four of whom took Part 1 only and one Part 2 only), 23 passed (three in Part 1 only and one in Part 2 only), and 25 were relegated. The successful candidates are as follows :—

Helen M. Benham.	Ralph Hobday.
H. J. Brown.	John Jeffrey.
John Byers.	Stewart Lloyd-Thomson.
*E. W. Chapman.	†W. B. Mowbray.
Jacob Cohen.	E. A. Paterson.
Cecil Dain.	R. A. Phillips.
‡D. T. Edwards.	G. W. Robertson.
N. R. England.	A. J. Saise.
K. E. F. Gardiner.	B. C. Sherren.
Eric Garthside.	†Reginald Tatam.
G. C. P. Gough.	W. G. Weir.
†B. A. Hatcher.	

*Distinction in Thesis.
†Part 1 only.
‡Part 2 only.

The Special Examination.

The Special Examination qualifying for candidature as Associate R.I.B.A. was held in London from December 7 to 13, 1927. Of the 19 candidates examined (two of whom took Part 1 only and one Part 2 only) eight passed (one Part 1 only) and 11 were relegated. The successful candidates are as follows :—

W. C. Childs.	R. G. Morgan.
A. L. Farman.	E. S. Stackhouse.
†A. J. W. Garrett.	Fredk. Waterman.
John MacGeagh.	C. S. O. Watson.

The Examination in Professional Practice for Students of Schools of Architecture recognised for exemption from the R.I.B.A. Final Examination.

The Examination was held in London and Edinburgh on December 13 and 15, 1927. Of the 35 candidates examined, 30 passed and five were relegated. The successful candidates are as follows :—

F. B. Armstrong.	Alexander Lipp.
E. H. Beale.	§R. W. Maitland.
W. R. Brinton.	Raymond McGrath.
H. A. H. Bull.	D. G. Mirams.
Frank Chippindale.	Mary F. Rigg.
D. L. Crawford.	Mary F. Scott.
C. R. Crickmay.	§G. D. Smart.
§R. F. R. Day.	L. G. Stokes.
M. A. de Quincey.	W. V. Trubshawe.
H. M. R. Drury.	L. C. F. Varcoe.
E. M. K. Ellerton.	R. M. Walker.
M. F. R. Ellis.	S. T. Walker.
§Ian Forbes.	B. R. Ward.
J. V. Hamilton.	§R. T. Westendarp.
Henry Kendall.	Mary L. Wilkinson.

§These candidates have not yet completed school course.

Special Examination in Design for former Members of the Society of Architects.

The Special Examination in Design for former Members of the Society of Architects to qualify for the Associateship R.I.B.A. was held in London from December 7 to 12. Of the three candidates examined, one passed and two were relegated. The successful candidate is W. J. Buchan.

Various.

University College, Hull.—Mr. John Bilson was appointed to represent the R.I.B.A. on the Court of Governors of University College, Hull.

Architects' Benevolent Society.—The usual annual grant of £100 was made to the Architects' Benevolent Society for the year 1927.

Presentation to the R.I.B.A.—The Council passed a cordial vote of thanks to Mr. Percy B. Tubbs for his kindness in presenting an oil painting ("Interior of Cathedral") to be hung at 28, Bedford-square.

Studentship.—The following were elected as Students of the R.I.B.A. :—

Bower, S. E. D. (Architectural Association).
Bradbury, Ronald (University of Manchester).
Bullivant, L. F. (Special Exemption).
Carr, David (Edinburgh College of Art).
Cooke, Anne Joyce (Architectural Association).
Coulter, H. G. (University of London).
Cowin, J. N. (University of Liverpool).
Crabtree, William (University of Liverpool).
Dicker, Alma Josephine (Architectural Association).
Folkes, J. H. (Birmingham School of Architecture).
Hawson, Hugh (Edinburgh College of Art).
Johnson, Allan (Leeds College of Art).
Lightfoot, B. St. Clair (University of Liverpool).
Murray, Eric (University of Liverpool).
Noble, G. P. (Architectural Association).
Peskett, H. M. (Architectural Association).
Plant, W. G. (University of Liverpool).
Playne, Edward (Architectural Association).
Redwood, R. S. (Royal West of England Academy, Bristol).
Richards, J. M. (Architectural Association).
Robbie, H. P. (Glasgow School of Architecture).
Segar-Owen, G. J. S. (University of Liverpool).
Townend, C. M. (Special Exemption).
Walker, R. M. (Architectural Association).
Winter, Kathleen (Architectural Association).
Wright, Lawrence (University of Liverpool).
Yorke, F. R. S. (Birmingham School of Architecture).

Under the provisions of the South African Architects' and Quantity Surveyors' Act of 1927, the Minister for the Interior has appointed an inaugural board of seven members, of whom three — Mr. D. M. Burton, F.R.I.B.A., Mr. J. S. Cleland, F.R.I.B.A., and Mr. R. Howden, F.R.I.B.A.—are members of the Royal Institute. Mr. Robert Howden has been elected vice-chairman of the board.

BRISTOL SOCIETY OF ARCHITECTS.

A lecture was given by Mr. F. R. Yerbury, Hon.A.R.I.B.A., at the third meeting of the session of the Bristol Society of Architects, which was held recently at the Royal West of England Academy. Mr. G. C. Laurence, R.W.A., F.R.I.B.A. (vice-president of the Wessex Society of Architecture), presiding in the unavoidable absence of the president, Mr. F. W. Dening, R.W.A., F.R.I.B.A.

Great use was being made of new architectural designs in Europe at present, said the lecturer, and although they brought up all sorts of problems and possibly might not please everybody, they might possibly afford food for inspiration in some of the designs. The needs of the people became apparent after the war, and architects had been called in to produce houses *en masse*. There had been a great awakening in the various cities towards the responsibility of bettering the lot of the working classes.

There were then exhibited about one hundred slides showing houses which had been erected by the Stuttgart Exhibition.

A vote of thanks was proposed to the lecturer by Mr. J. E. Barton (headmaster of Bristol Grammar School) and seconded by Mr. R. Edwards, A.R.I.B.A. (hon. treasurer of the Bristol Society of Architects).

THE BUILDING TRADE

EVERYDAY SCIENCE FOR ARCHITECTS AND BUILDERS—III

By A. M. GILES, B.Sc., A.I.Struct.E., A.M.I.E.E., *Author of "Mechanics in Daily Life," etc., Lecturer in Building Science, Structural Mechanics, Graphical Statics, etc., at the Northern Polytechnic School of Architecture and Building.*

DIAGRAMS AND ILLUSTRATIONS BY M. R. DUMVILLE.

Hydraulics.

COMING under this heading is information dealing with water-pressure, head of water, flow of water, the hydraulic ram, and the hydraulic testing machine.

Many people engaged in plumbing say that the pressure of water increases about a half-pound per square inch for every foot increase of "head." Let us first endeavour to make clear what this means.

We have learned in the previous sections that a cubic foot of water weighs 62.5 lb., therefore, if we have a cubic foot of water contained in a tank or cistern, the whole of the weight of this water is resting on the bottom of the tank. Now, suppose the area of the bottom of the tank is 1 sq. ft., then we have 62 5 lb. of water resting on 144 sq. in., and therefore the weight or pressure on 1 sq. in. will be 62.5 lb. divided by 144, which is 0.434 lb.

Since the area of horizontal cross-section of the tank is 1 sq. ft., and the volume of water in the tank is 1 cu. ft., therefore the depth of the water is 1 ft., and therefore, when we have a depth of 1 ft. of water, the pressure on 1 sq. in. is 0.434 lb. This is very nearly the half-pound of which plumbers speak.

(Note.—When air-pressure is discussed later on, it will be seen that the pressure due to water on each sq. in. is increased by about 15 lb.)

Experiment.

1. To show that the pressure at a point in a liquid depends upon the depth of the point below the surface, or upon the height of water above the point.

2. To show that the pressure at a point is the same in all directions, and not, as it is very often supposed to be, simply downwards.

In Fig. 9, B is a piece of glass tubing bent to the shape of a U. It is often called a U-tube. It contains a small quantity of coloured water, which stands at the same

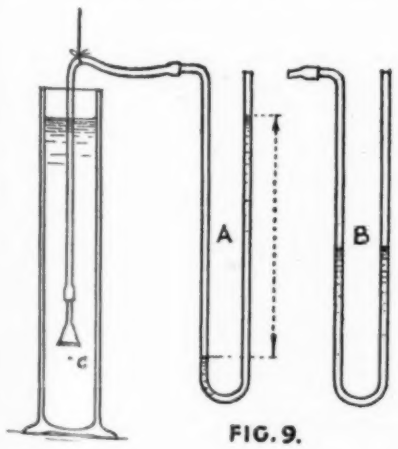

FIG. 9.

height in both limbs of the tube. Any other liquid would do just as well; in fact, mercury (quicksilver, as it is often called) is often used because it is easily seen and does not wet the glass. Another reason for using mercury is because of its high specific gravity. It is 13.6 times heavier than water, and consequently renders the manometer less unwieldy when measuring high water-pressures.

The tall glass cylinder contains water. Again any fairly deep vessel would do equally well. Fix a piece of rubber tubing to one limb of the U-tube, as shown at A. Next, gradually lower the other end of the rubber tubing, to which is attached a small funnel, into the water in the tall cylinder, at the same time noticing the liquid in the U-tube. It will be seen that, as the funnel goes down into the water, the liquid in the right-hand side of the U-tube rises and gets higher and higher than that in the left-hand side.

The only thing that can cause the liquid to rise on one side of the U-tube and to fall on

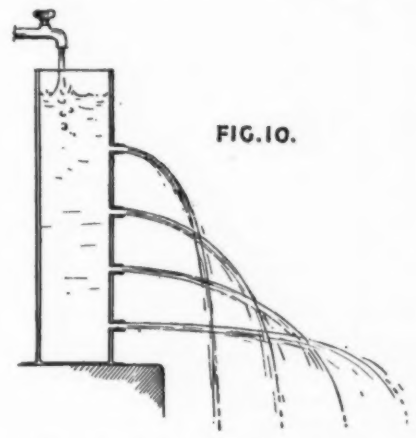

FIG. 10.

the other is that there must be a greater pressure on the one side. This pressure must come from the water at the mouth of the funnel, and it gets greater as the funnel goes deeper. Suppose it remained steady at the point C, then, by finding the difference in level between the surfaces of the liquid in the two sides of the U-tube, we can calculate what the actual pressure is at the point C.

(Note.—If the liquid we use in the U-tube be coloured water, then the difference in levels shown in the U-tube should be the same as the depth of the point C below the water surface in the cylinder.)

From our illustration we can see that the pressure at C is vertically upwards, *i.e.*, up the mouth of the tubing. In order to show that the pressure at the point is the same downwards and sideways, it is only necessary to turn the mouth of the funnel upwards or sideways, as required.

Experiment.

Another experiment to show that the pressure at a point increases with the depth, also that it is sideways, will explain itself if the illustration Fig. 10 is studied.

Pressure at a Point due to Head of Water.

The pressure, then, at any point in a quantity of water depends upon the vertical depth of the point below the free surface, or upon the vertical height of the water above the point, whichever way one looks at it. This vertical depth or vertical height is known as the "head of water."

The "head of water," then, decides the pressure at any point, *e.g.*, if the water in the cistern is 30 ft. higher than the tap in the scullery, the pressure at the tap is due to a 30-ft. head of water, and at the beginning of this article we learned that for each foot there was a pressure of 0.434 lb. per sq. in.; therefore, the pressure due to the 30-ft. "head" is 30 times 0.434 lb., *i.e.*, 13.02 lb. per sq. in.

So far, we have only spoken of the pressure at a point in water, but, by similar arguments, we may say that the pressure at a point in any other liquid depends upon the "head of liquid." Since, however, other liquids have not the same density as water, then the pressure due to the "head of liquid" will not be the same as that for water. Suppose the liquid has a specific gravity 2, then the pressure per foot head of liquid will be 0.434×2 lb. $= 0.868$ lb. per sq. in. If its specific gravity were 13.6, which is that of mercury, then the pressure per foot head of mercury would be 0.434×13.6 lb. $= 5.9$ lb. per sq. in.

Therefore, the pressure at a point in a liquid depends upon (*a*) the "head of liquid," (*b*) the specific gravity of the liquid.

Experiment.

Suppose a water tap is connected to the "main," and you wish to measure the water-pressure at the tap. Take the U-tube, shown in Fig. 9, use mercury instead of coloured water, and connect one limb of the U-tube to the tap by a piece of thick-walled rubber tubing. Open the tap slowly and carefully, when you will at once find out whether it is necessary or not to use a U-tube with very much longer limbs, and also a much larger quantity of mercury.

Suppose, after opening the tap fully, the difference in levels in the two limbs of the U-tube is 5 ft. 6 in. of mercury.

Then—

1. The pressure in lbs. per sq. in. at the tap, since 1 ft. of mercury gives 5.9 lb. per sq. in., will be 5.5 ft. $\times$ 5.9 lb. $= 32.5$ *lb. per sq. in.*

2. The head of water above the tap, *i.e.*, the vertical height of the water in the reservoir above your tap, will be equal to 5 ft. 6 in. of mercury, and since the specific gravity of mercury is 13.6, therefore the head of water will be 13.6 times the head of mercury.

$$i.e.,\ 5.5 \times 13.6 = 74.8 \text{ ft.}$$
$$= \textit{say } 75 \textit{ ft.}$$

A head of mercury of 5 ft. 6 in. is somewhat awkward to handle; we therefore use for pressures of this size a slightly different manometer, or, as we shall call it, "pressure-gauge." This is a U-tube with one limb closed, and it depends upon the relation between the pressure and volume of a fixed quantity of air. We will therefore leave the description of it until after we have done gas pressure.

Now, we are told that draw-off taps, ball-taps, and stop-taps, etc., should be of sufficiently good quality, and of sufficient strength to stand a pressure of 300 lb. per sq. in. Of course, we may say that this should apply also to the pipes to which the taps are fixed. It looks a pretty high figure when we have just seen that a head of water of 75 ft. only exerts about one-tenth of that amount, viz.: 32.5 lb. per sq. in.

It may now be mentioned that there are other things that will produce pressure on the pipes and on the taps in addition to that due simply to the "head of water." For example, turning off the tap, or shutting off the flow of water quickly, will produce a tremendous instantaneous extra pressure beyond that due just to the head of water. Also, there is the pulsing of the water known as "water hammer," which will produce a series of very rapid alterations of pressure.

It is always well, therefore, to have a sufficiently large "factor of safety."

Pressure in Boilers.

There is another phase of water-pressure that is sometimes overlooked. The temperature at which water boils depends upon the pressure on its surface, *e.g.*, the pressure of the atmosphere is about 14.7 lb. per sq. in., and when this is the only pressure on the

surface of water it boils at a temperature of 212 degs. F. If now by some means the pressure on the surface of the water is increased by 10 lb. per sq. in., the boiling point is 240 degs. F.; if by 20 lb., then the boiling point becomes 260 degs. F.

Such extra pressures as these may easily be obtained by the head of water of the cistern above the boiler. We may repeat here that 1 lb. per sq. in. pressure is caused by a "head" of 2 ft. 4 in.; therefore, 7-ft. "head," gives a pressure of 9 lb. per sq. in. In this latter case we see that this extra pressure will cause the boiling point of the water to rise to almost 240 degs. F. It certainly, therefore, becomes very necessary that correct precautions should be taken.

Consequently we hear of such things as safety-valves, and expansion pipes. Should the safety-valve be out of order, as it very often is, or the expansion pipe become stopped up at its upper end, an event which may easily happen in the winter time, then the pressure inside the boiler will be very quickly increased until it is sufficient to burst it.

Flow of Water.

Very often one is asked to say what quantity of water in gallons per minute will flow from a cistern under a constant "head." There are many refinements in the calculation of the flow of water in pipes, such as the velocity being greater at the centre of the pipe than it is next to the pipe itself, owing to friction, just as the water in the middle of a river flows quicker than it does near the banks.

For a good approximation of the quantity of water that flows from a cistern, we may calculate as follows:—First find the velocity of outflow, then multiply this by the area of cross-section of the pipe, and we shall get the number of cubic feet of water per minute that has flowed from the cistern.

To find the velocity, we have to make use of the acceleration (*i.e.*, the increase in velocity per second) of a body falling under the action of gravity. This is denoted by "*g*," and we may take its value as 32 ft. per second each second. Then the velocity of flow from a cistern under a head of "*h*" feet may be determined from the formula:—

$$V = \sqrt{2gh} = \sqrt{2 \times 32 \times h} = 8\sqrt{h}$$

where V = velocity in feet per second
and *h* = head of water in feet.

Example—

Find the quantity of water in gallons per minute which will flow from a cistern under a constant "head" of 25 ft. from a 1-in. pipe.

$V = 8\sqrt{h} = 8\sqrt{25} = 8 \times 5 = 40$ *ft. per second.*

The area of cross-section of a 1-in. pipe is

$$(\pi r^2).$$

$$= \tfrac{1}{2}\tfrac{1}{4} \times \tfrac{1}{2}\tfrac{1}{4} \times {}^{"2}_{1} = \tfrac{1}{5}\tfrac{1}{0}\tfrac{1}{8} \text{ sq. ft.}$$

and volume of discharge = velocity × area.

$= 40 \times \tfrac{1}{5}\tfrac{1}{0}\tfrac{1}{8}$ cu. ft. per sec.

$= 40 \times \tfrac{1}{5}\tfrac{1}{0}\tfrac{1}{8} \times 60$ cu ft. per min.

$= 40 \times \tfrac{1}{2}\tfrac{1}{0}\tfrac{1}{8} \times 60 \times 6\tfrac{1}{4}$ galls. per min.

= 81.8, say 82 *galls. per min.*

Suppose we take friction into account, and because of that the amount is diminished by 15 per cent., then

volume of discharge = 69½ *galls. per min.*

New Exhibition Halls, Manchester.

A site for two exhibition halls in Manchester that together will have a total area greater than Olympia, London, and will cost £750,000, has been bought by a syndicate of London and Manchester business men, says the Manchester *Evening News*. While the bigger of the halls will be confined to trade shows, the adjoining smaller hall will also be used for social and political purposes. To meet the demand for more accommodation for visiting business men, the scheme includes a hotel with 300 bedrooms and a garage below capable of accommodating 1,000 motor-cars.

NEW BUILDINGS IN LONDON

Becontree.—SITES.—The L.C.C. has sanctioned the following sites:—Barclay, Perkins and Co., Ltd., site at Five Elms, Wood-lane, for the erection of premises; Glenny's Brewery, Ltd., site of the "Church Elm" beerhouse, at the corner of Church Elm-lane and Heathway, Dagenham, for the reconstruction and enlargement of the existing premises; Barclay, Perkins and Co., Ltd., site in Gale-street, south of Gale-street railway halt, about one acre in extent, for the erection of premises; Watney, Combe, Reid and Co., Ltd., site in the Barking area, near Porters Lodge, for the erection of premises with a full licence; and the Improved Public-house Co., Ltd., site in Longbridge-road, at the corner of Becontree-avenue, for the erection of premises.

Camden Town.—EXCHANGE. — Messrs. H. Lacey & Sons, of Luton, are the accepted contractors for the erection of the Camden Town Employment Exchange for His Majesty's Office of Works.

Charing Cross.—RECONSTRUCTION.—The existing booking hall of Charing Cross Underground Railway Station is to be demolished and a new one constructed with an area three times the size of the present one. This hall will extend practically the whole length of the District Railway platforms. The hole-in-the-wall booking hatches will be replaced with a passimeter system. A waiting and tea room, and a cloak room also will be provided. Whilst the present arcade connecting Villiers-street with the Embankment will remain, it will be occupied on one side by shops. Consideration is being given to the provision of a public tea room also.

Croydon.—DEPOT.—A site in Selsdon-road has been purchased by the National Benzole Co., Ltd., Buckingham Gate, S.W.1, for the erection of a large petrol service depot.

Dean-street.—REBUILDING.—Messrs. Allsopp and Co., Ltd., brewers, have decided to rebuild their "Crown and Two Chairmen" public-house, at the corner of Dean-street and Bateman-street, W.1. The builders are Messrs. Courtney and Fairbairn, Ltd., 377, Albany-road, S.E.5. Plans have been prepared by Messrs. F. J. Eedle and Meyers, 8, Railway-approach, London Bridge, S.E.

Downham.—STORES.—The South Suburban Co-operative Society, Ltd., Croydon, have bought a site from the L.C.C. at Downham on the housing estate, for the erection of a branch stores. Plans have been prepared by Messrs. Bethell, Swannell and Dunsford, 16A, John-street, W.C.2.

Ealing.—HOUSES.—The local town council has approved plans for the erection of 60 houses in Long-drive and eight in Birkbeck-avenue for Mr. Stanley Baxter.

East Ham.—ADDITIONS.—The Borough Engineer of the Borough Council has prepared plans and estimates of the proposed additions to the Central Baths.

Finsbury.—ADDITIONS. — The L.C.C. has approved the proposal of the governors of the Central Foundation school for boys to purchase the leases of certain adjoining property in Tabernacle-street to enable them to provide additional accommodation and to build a new sanitary block.

Hackney.—POST OFFICES.—H.M.O.W. has accepted the tender of the Triangular Construction Co. for the erection of the Hackney Post Office and Telephone Exchange.

Hammersmith. — SCHOOL. — The London County Council has decided to provide a new central school for about 400 children to the south of Western-avenue on the Council's Wormholt estate. The site is 2.1 acres in area, and rectangular in shape, and has an entrance on the south side from Bryony-road.

Hendon.—SCHOOL.—The Welwyn Builders, Ltd., have been notified that, subject to the approval of the Ministry, their tender for the erection of the Goldbeaters School for the Education Committee, at a cost of approximately £44,000 has been accepted.

Islington. — EXTENSIONS. — Plans for the proposed extensions to the Islington Town Hall are now before the committee. The scheme has been prepared by Mr. E. C. P. Monson, F.R.I.B.A., Finsbury-pavement House, E.C. 2, and is estimated to cost £30,000.

King's Cross. — EXCHANGE. — Messrs. F. Hutton & Son, of Colchester, have secured the contract for the erection of an employment exchange for H.M.O.W. Plans have been prepared by the H.M.O.W. Architect's Dept.

Lewisham.—SCHOOL.—Subject to the approval of the Board of Education the L.C.C. has approved the plans submitted by the promoters for the erection of a new Roman Catholic school at Beckenham Hill, Lewisham.

Shepherd's Bush.—EXCHANGE.—H.M.O.W. has given the contract for the erection of the Shepherd's Bush Employment Exchange to Messrs. H. Hann, of Wimbledon.

Streatham.—SCHOOL.—A site has been obtained by the L.C.C. near Drewstead-road for the erection of a new secondary school.

Vauxhall.—ALTERATIONS. — Messrs. Higgs & Hill are the builders for the extensions and alterations to Messrs. Brand & Co.'s premises in South Lambeth-road. Messrs. Searle & Searle, 34, Paternoster-row, E.C., are the architects, and the constructional steelwork is being supplied by Messrs. Young & Co., 5, Queen Anne's-gate, S.W.

Victoria Station.—BANK.—National Provincial Bank, Ltd., 15, Bishopsgate, E.C.3, are to build a branch bank in Victoria Station. The builders are Messrs. G. E. Wallis & Sons, Ltd., Medway House, Old Cavendish-street, W.1. Plans have been prepared by Messrs. F. C. R. Palmer and W. F. C. Holden, FF.R.I.B.A.

Vincent-square.—HOSTEL.—A site in Vincent-square, S.W.1, has been selected by the University of London (King's College) for the erection of a new hostel for theological students, the building to consist of four floors, with a chapel. The architect is Mr. A. C. Martin, F.R.I.B.A., 9, New-square, Lincoln's Inn, W.C.

Wardour-street.—BUILDING.—A new office building is to be built in Wardour-street and Little Chapel-street, W.1, to the designs of Messrs. Gunton & Gunton, Empire House, St. Martin's-le-Grand, E.C.2. The builders are Messrs. Rice & Son, Stockwell-road, S.E.9.

Westminster. — OFFICES. — In order more fully to develop their property in Horseferry-road, S.W., the directors of Messrs. Hovis, Ltd., have decided to build a large block of offices, with suites of residential flats on the upper floors. The architect is Mr. G. E. Withers, F.R.I.B.A., 50, Cannon-street, E.C.4.

Willesden.—HOUSES.—Tenders are now being invited by the Willesden Urban District Council for the erection of 277 houses at Neasden-lane, Neasden. Mr. F. Wilkinson, Engineer to the Council, has prepared the plans.

Wilton-road.—SHOPS.—A block of one-story shops is being built in Victoria Station forecourt, facing Wilton-road, S.W.1, for the Southern Railway, to the plans of their architect, Mr. J. R. Scott. The builders are Messrs. A. & F. J. Leather, 17, Victoria-street, S.W.1.

Wimbledon.—EXTENSIONS.—The Wimbledon Borough Council has received permission from the Minister of Health to borrow £25,000 for extensions to the baths in Latimer-road, S.W. The Borough Surveyor to the Council has prepared the plans.

Wood-lane.—STAND.—The Birchgrove Constructional Co., Swansea, have secured the contract for the erection of a covered-in stand at the White City Stadium, for the G.R.A., Ltd. The amount of the contract is stated to be £20,000.

Woodstock-street.—OFFICES.—New office premises are to be built on the site of 17, Woodstock-street, W.1. The builder is Mr. T. Stevens, 49, South Molton-street, W.1. the demolition and excavation being by St. Mary's Wharf Cartage Co., Ltd., Paddington, W.2. The architects are Messrs. A. E. Hughes & Son, 28, Mortimer-street, W.1.

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS.

ANNUAL DINNER.

At the Hotel Victoria, Charing Cross, on Tuesday evening, Mr. W. King (President) occupied the chair at the annual dinner of the National Federation of Building Trades Employers of Great Britain and Ireland. Amongst those present were: Sir Kingsley Wood (Parliamentary Secretary, Ministry of Health), Mr. Walter Tapper (President, R.I.B.A.), Mr. W. Hull, Mr. J. E. Driver, Mr. Percy Thomas (Vice-President, R.I.B.A.), Mr H. J. Deane, Mr. A. H. Adamson, Mr. H. D. Searles-Wood, Mr. S. Smethurst, Mr. W. W. Finlayson, Mr. G. Sapcote, Mr. T. Foster, Mr. Fred Thorne, Mr. J. M. Theobald, Mr. Stephen Easten, Mr. T. Barron, and Mr. R. Coppock (President and Secretary, National Federation of Building Trades Operatives), Mr. F. G. Hodges, Mr. J. B. Forbes Watson, Mr. J. W. Willoughby, Mr. Jno. Croad, Mr. G. A. Coulson, Mr. C. E. France, Mr. J. B. Cooke, Mr. C. R. Steer, Mr. W. J. Turnbull, Mr. W. Bosworth, Mr. W. F. Gibson, Mr. S. P. P. Ginn, Mr. R. H. Tribe, Mr. R. L. Roberts, Mr E. J. Brown, Mr. A. B. Falkner, Mr. P. C. Culver, Mr. E. J. Strange, Mr. E. J. Rimmer, Sir J. Walker Smith, and Mr. A. G. White (Secretary).

In proposing the toast of the "National Federation," Sir Kingsley Wood said it was almost impossible to over-estimate the value of the contribution the building industry had made to housing since the Armistice. He supposed few industries had had to cope with so many difficulties during the past four or five years, particularly in a depleted personnel and in high cost of materials. He could recall the efforts of local authorities in providing houses, but he particularly wished to express the great debt the nation owed to the private builder and private enterprise. Altogether 1,050,000 houses were built since the Armistice, and of these no less than 652,000 were erected by private builders. Another fact he would like to recall was that of the 652,000 houses built by private enterprise, no less than 350,000 were built without State assistance; that, he thought, was very significant, and perhaps of more value than the other figures he had mentioned. It was a fine accomplishment to have built so many houses without assistance. The country owed it to the local authorities and the building industry that the whole standard of housing had been improved. In addition to high prices, the industry had had to face State interference; that was one of the things that at the time, and perhaps to-day, was a necessity, but the sooner it was ended the better for everyone connected with the industry.

One of the finest things the President could look back to, and it was an example to the rest of the country, was the fact that during his year of office there had been a most excellent relationship between employers and employed; for that both sides should be thanked, and he hoped the harmony in the building industry would commend itself to other organisations in this country.

During the past 12 months the work of the Federation had been particularly distinguished by the fact that they had been able to devise a most important and valuable form of building contract. That was, undoubtedly, a very considerable achievement, and would certainly make for economy and avoidance of disputes, and the settlement of disputes that might arise. In that connection he would particularly like to mention the work of Sir Walker Smith and Mr. Stephen Easten on behalf of the contractors, and Major Harry Barnes and Mr. H. D. Searles Wood on behalf of the architects. This form of contract registered a most important step so far as the industry was concerned.

There had recently been an indictment in the Press against British industry for not being sufficiently interested in research work, but that could certainly not be applied to the building industry. Builders were showing a growing appreciation of the need for research. Builders in increasing numbers were seeking assistance from the Building Research Station in regard to technical difficulties, and he hoped they had all read the recent report of the Building Research Board which showed how necessary it was that modern scientific methods should be developed in building. The future prosperity of the industry very largely depended upon new methods and materials.

The National Federation was a very powerful body, and he ventured to suggest that they could help the Government and the nation by doing their utmost to bring down building costs. So far as housing was concerned, provided reasonable prices and reasonable conditions could be obtained, he thought they could look forward to a period of steady development and prosperity not only in connection with housing, but with building work generally. The national housing scheme depended to a large extent upon reasonable prices. Although the Government was naturally proud of helping in securing and passing the million mark, they did not feel that their work was finished, for there was still a great need in many parts of the country. During the next two years or so the Government particularly wanted to attack two very important and difficult problems. The Government felt that whilst great progress had been made in meeting the needs of a very large number of workers, they had not yet been able to satisfy the demand for the type of house that could be let at a rent that the poorer classes could afford to pay, and it was hoped that some progress would be made in that direction. Secondly, the Government thought the time had now arrived when they could renew the national battle against the slums. The condition of some of our cities and villages was still a national scandal, and now that so many new houses had been built, it was time attention was turned to the problem of the slum. One of the ways of dealing with the problem was the reconditioning of houses in slum areas. At the present time the Ministry of Health was engaged in the consideration of whether a step could be taken in that direction, and when Parliamentary time permitted steps would be taken to secure powers to deal with the reconditioning of existing old houses. In conclusion, he expressed his appreciation of the work done by the President during his year of office.

In responding, the PRESIDENT said the employers realised they could not do all they wished to do as employers, and they looked to the operatives to assist them in that direction. On other occasions, they had never appealed to the operatives in vain; the operatives had helped in overcoming the shortage of personnel in the industry. He would appeal to the employers and employed to consider quality as well as quantity in the ranks of the workers. He was recently told by the head of a Government department that it was impossible to get craftsmen of the quality needed for a certain work. Mr. Barron had said it was the duty of the operatives to take an intelligent interest in the future of the industry, but that was more than ever the duty of the employer. The time was long overdue when employers should take a more intelligent interest in the apprentices in the industry. During the past year the Federation had made great strides. They had a new constitution and rules to govern the Federation, which would not only make for economy but for efficiency, and a considerable saving of the time of the members. They had also completed a new form of contract, due to the help and co-operation of architects and quantity surveyors, and he hoped that now they had got so far nothing would interfere with the bringing of it to a successful conclusion. He would say without hesitation that it was in the interests of all concerned.

As to the price of building, builders were very much concerned with that problem, because in some parts of the country building had practically stopped owing to high cost. In conclusion, he expressed his thanks to the staff of the Federation.

Mr. STEPHEN EASTEN, proposing "Architects and Surveyors," said there had been some criticism of the proposed new form of contract, one of which had come from the architects who seemed to suggest that it was undignified that they should be subject to appeal by arbitration. But they had to remember that even judges' decisions were subject to appeal.

Mr. WALTER TAPPER, responding, said it was all to the good that in recent years architects and builders had got closer together, and that was all to the good of both, for without cordial understanding between architects and builders they could not get on. The negotiations that had resulted in the new form of contract had lasted for about seven years, and had at last been brought to a successful issue. He hoped that very shortly the general bodies on both sides would ratify what had been arranged. In urging the settlement of industrial disputes, he asked, "Why cannot these disputes be settled before it comes to a strike or a lock-out?" It must be possible for people of understanding in these matters to come to an amicable settlement before things came to a head; such things should not happen.

Mr. J. M. THEOBALD responded on behalf of the surveyors, and gave an enjoyable humorous speech.

"The Ladies" was proposed by Mr. W. F. Gibson (President of the Institute of Builders), and responded to by Mrs. S. Purkiss-Ginn.

Mr. Fred Thorne proposed "Our Guests," to which Major Harry Barnes and Mr. Thomas Barron responded.

Building Trade : Employment Conditions.

Employment during December, says the *Ministry of Labour Gazette*, again showed a general seasonal decline, and was slack, on the whole; the decline was greatly accentuated during the latter half of the month by the effects of the severe weather. As regards individual occupations, employment showed a marked decline with plasterers, bricklayers and masons, and was generally slack; it also declined with carpenters and joiners and with slaters, and was quiet, on the whole; it was again worse with painters, and in the majority of districts was very slack. Employment showed little variation with plumbers, and continued generally fair; it remained slack with tradesmen's labourers. As compared with December, 1926, employment was considerably worse with plasterers, bricklayers and masons, and declined in other classes.

New Technical School, Western Canada.

We learn that plans are being prepared for the erection of a new technical school in Western Canada, involving an expenditure of 450,000 dollars (£90,000). The main building is to be a four-story structure of reinforced concrete, measuring 450 ft. in length and 65 ft. in width. It will provide space for 60 classrooms, in addition to physical, electrical and general laboratories. An auditorium will be included in the scheme, with a seating capacity of 1,000 and equipped with a stage. The boiler room will be so arranged that classes can be taught and work demonstrated on pumps, vacuum systems, temperature controls and other essential operations of heating and ventilating plants. It is expected that construction will be commenced early this year. United Kingdom firms interested in this matter from the point of view of the supply of either building fittings and furnishings or of workshop and laboratory equipment can obtain further particulars, including the names and address of the architect and the principal of the School, on application to the Department of Overseas Trade, 35, Old Queen-street, S.W.1.

POINTS IN CONNECTION WITH THE LAW OF LANDLORD AND TENANT—XIV.

OUTSIDE LIABILITIES IMPOSED BY COVENANT—*continued.*

IN our last article we were referring to covenants which placed the liability for expenses incurred in making up streets under the Public Health Act, 1875, and the Private Street Works Act, 1892, on lessees and tenants, and we showed that as under those Acts the expenses become a charge upon the premises when the works are completed the liability of the lessee or tenant under a covenant in the tenancy agreement will attach from that date and not from the final apportionment, but in the Metropolitan area where streets are made up under the Metropolis Management Acts it appears that different considerations will apply, for as we shall now show expenses incurred under those Acts are not a charge upon the premises.

Street Works in the Metropolitan Area.

The two sections of those Acts which relate to the making up of streets are section 105 of the Metropolis Management Act, 1855, as amended by section 77 of the Metropolis Management Amendment Act, 1862, and under those sections it was held in Egg *v.* Blaney (1888, 21 Q.B.D. 107) the expenses are not a charge upon the premises, they are a personal liability imposed upon the owner (Vestry of Bermondsey *v.* Ramsay (1871, 6 P.C. 247)), but it appears that if the claim is unsatisfied the liability falls upon successive owners, for in this latter case the Vestry had recovered judgment for expenses incurred against the owner of the premises, but the judgment had not been satisfied, and it was held this was no bar to a subsequent action in respect of the same expenses brought against an occupier who occupied as tenant of a succeeding owner.

By section 105 of the Metropolis Management Act, 1855, if either the owners forming the greater part of any new street desire, or the local authority deem it necessary and expedient to have a new street paved, the local authority shall pave the same, and the owners of the houses forming such street shall on demand pay the estimated expenses the amount of which is to be determined by the surveyor, and then there is a provision that if the estimated expenses exceed the actual sums expended the difference shall be repaid to the owners and vice versa.

Section 77 of the amending Act of 1862 extended the section to land unbuilt upon, and that section provides that any such expenses, including the cost of paving at the points of intersection of streets and all other incidental costs and charges "shall be apportioned by the vestry or board and shall be recoverable either before the work shall be commenced, or during its progress, or after its completion," and any such amount shall be recoverable from the present or any future owner of the premises either by action at law or summarily at the option of the authority. Under the Act of 1855 the expenses could only be recovered summarily.

In Hampstead Corporation *v.* Caunt (1903, 2 K.B. 1; *The Builder*, May 3, 1903) street expenses had been incurred in 1891, and a demand for payment had been made upon the then owner of a house but had not been paid. The defendant became the owner in 1896, and in 1898 a demand for payment had been made on him and an action instituted in 1903. In that case it was questioned first, whether the right of action given in section 77 of the Act of 1862 applied to the owners of houses made liable under section 105 of the earlier Act, and secondly, whether in any case the action was not statute barred, as it was commenced more than six years after the defendant became owner. It was held that the two sections must be read together, and therefore an action could be brought either against the owners of houses or the owners of land, and that the action against the defendant was not statute barred because there was no cause of action until there was a demand, and the Statute of Limitations (if it ran at all) only ran from the date of the demand.

It is to be noted that in section 105 the words are "the owners of the houses forming the street shall on demand pay . . . the amount of the estimated expenses . . . such amount to be determined by the surveyor for the time being . . ." whereas in section 77 of the Act of 1862, which relates to the owners of land as well as the owners of houses, it is provided "any such costs and expenses . . . shall be apportioned by the vestry or board and shall be recoverable either before the work shall be commenced or during its progress or after its completion."

As it was held in Hampstead Corporation *v.* Caunt (*ubi sup*) that the two sections had to be read together and that a demand was necessary under both sections, it may be doubted whether the expenses are recoverable until a demand has been made, although, as we shall show below, there is authority to the effect that the expenses become recoverable after an apportionment has been made and notice of the apportionment has been given, but the case was decided before Hampstead Corporation *v.* Caunt.

Thus in Wix *v.* Rutson (1899, 1 Q.B. 474) it was held that under section 77 as soon as the vestry by formal resolution charged the owners of premises with the apportioned expenses and gave notice of the apportionment and charge, the owners became liable to pay the same without a formal demand, but as we have observed, since the decision in Hampstead *v* Caunt that case on that point may be of doubtful authority, although both cases were decisions of Courts of first instance and of concurrent authority, and if the charge does not become operative before a demand has been made upon the owner then in the absence of a demand the owner could not recover from his tenant under a covenant, although as we have shown in our twelfth article a wide view has been taken of the degree of compulsion necessary on the owner in connection with sanitary requirements under other statutes.

The facts in Wix *v.* Rutson were as follows: The premises were land without buildings upon it which, in 1882, had been demised by a lease of 21 years, of which the defendant was the assignee. The lease contained a covenant that during the term the lessee and his assigns should pay "all duties, assessments and impositions whatever which are now or may at any time hereafter be charged, assessed or imposed upon the said premises or any part thereof, or upon the landlord or tenant in respect thereof." The lease was terminable after the first seven years by six months' notice on certain terms.

In April, 1898, the lessors gave notice to determine the lease by six months' notice, and on May 9 they had entered into an agreement for sale of the premises, the date for completion being August 11, 1898. On June 9 the local authority gave the owners notice under section 77 of the Act of 1862, that they had apportioned and charged the owners with the estimated expenses in connection with paving a new street and that the amount could be paid before or on a certain day.

The works were not commenced until after the date when the six months' notice to quit given to the lessee expired in October. The lessors had paid the sum and were seeking to recover the same from the lessee. The Court held that as soon as the local authority by a formal act or resolution charged the owners with the expenses as apportioned and gave the owners notice of the apportionment and charge, the charge became operative and the owners were liable to pay immediately after the service of the notice, and the sum so paid was within the covenant by the lessee to pay duties, impositions and assessments and he was liable to repay the owners. As regards this latter point the Court was following an earlier decision, Thompson *v.* Lapworth (1868, L.R. 3 C.P. 149). That case arose under section 96 of the Act of 1862, involving rather different considerations, which we shall refer to below, in which it was held that a lessee under covenant to pay "all duties and assessments whatsoever which during the continuance of the demise should be assessed or imposed upon the tenant or landlord of the premises demised in respect thereof" was liable to pay to the landlord expenses in relation to street works of which notice of the apportioned amount had been given to the landlord.

Section 96 of the Act of 1862 enables the local authority at their discretion to require the payment of any costs or expenses which the owner may be liable to pay under the above Acts either from the owner of the premises or from the occupier, "and such owner or occupier shall be liable to pay the same, and the same shall be recovered in manner authorised by the recited Act (1855) and this Act," but the occupier shall be entitled to deduct the sums so paid from the rent from time to time becoming due as if the same had been actually paid to such owner as part of such rent, but the sum paid by the occupier is limited to the amount of the rent due from him to his landlord. It is, however, provided in this section that nothing therein contained shall be taken to affect any contract made between any owner and occupier whereby it is agreed that the occupier shall pay and discharge all rates, dues and sums of money payable in respect of such premises, or to affect any contract whatsoever between landlord and tenant. In Skinner *v.* Hunt (1904, 2 K.B. 452) the tenant of certain premises held under a lease which contained a covenant that he should pay "all assessments whatsoever now or hereafter to be charged upon the premises or upon the landlord or tenant in respect thereof," and in the lease there was also a reference to certain stipulations under which the landlord held the land which were also to be observed by the tenant, one of which was "the purchaser shall pay all charges imposed by any local authority on the frontagers in respect of such road and footpath, or the making or repair thereof." In 1902 the tenant had received a notice from the local authority requiring him not to pay any rent then due or thereafter to become due without deducting therefrom the sum of £34 19s. 2d. due to the authority in respect of an apportionment of the estimated cost of paving the road and footpath, and the tenant paid the local authority £10, the amount of rent then due. The landlord distrained for the rent thus paid, and the tenant brought this action for illegal distress. The tenant contended that what he had paid was rent, but the Court of Appeal held that what was paid was the expenses connected with the road works and not rent, for which the local authority could give no valid discharge; the payment of those expenses would give him a right of set off against any claim for rent by the landlord, but here there could be no such right, as under the lease the tenant had undertaken to pay those expenses under a contract specially reserved by the section, and thus the distress was legal.

In the space of one article we can carry the matter no further. We have endeavoured to show that under the Metropolitan Acts, unlike the Public Health Acts and the Private Street Works Act, the charge of making up streets does not attach as from a particular date, viz., the completion of the works, but that the expenses may become due before the works are executed. That probably under both the Acts of 1855 and 1862 a demand is necessary! That the liability attaches to the owner or successive owners, and therefore is a liability requiring special attention by those purchasing property or entering into tenancy agreements which contain covenants which will shift the liability from the owner on to the tenant.

RATES OF WAGES IN THE BUILDING TRADE

[Every endeavour is made to ensure accuracy but we cannot be responsible for errors.]

	Masons	Bricklayers.	Carpenters Joiners	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Alfreton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Alnwick	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ashford (Kent)	1/4½	1/4½	1/4½	1/4½	1/8	1/8	1/8	1/3½
Ashington	1/8	1/8	1/8	1/8	1/4½	1/4½	1/4½	1/0½
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Aylesbury	1/4½	1/4½	1/4½	1/4½	1/8	1/8	1/8	1/3½
Aylsham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Banbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Barnsley	1/8	1/8	1/8	1/8	1/4½	1/4½	1/4½	1/0½
Barnstaple	1/5½	1/5½	1/5½	1/8	1/8	1/8	1/8	1/3½
Barrow-in-Furness	1/8	1/8	1/8	1/5½	1/5½	1/5½	1/5½	1/1½
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Basingstoke	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/8	1/3½
Bath	1/6	1/6	1/6	1/6	1/6	1/4½	1/4½	1/0½
Bedford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Berwick	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Bexhill	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Birkenhead	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Birmingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bournemouth	1/6	1/6	1/6	1/6	1/8	1/8	1/8	1/3½
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bradford-on-Avon	1/4½	1/4½	1/4½	1/8	1/8	1/8	1/8	1/3½
Braintree	1/5½	1/5½	1/5½	1/4½	1/4½	1/4½	1/3½	1/0½
Brentwood	1/7	1/7	1/7	1/5½	1/5½	1/5½	1/5½	1/1½
Bridgwater	1/5	1/5	1/5	1/7	1/7	1/7	1/7	1/2½
Bridlington	1/7½	1/7½	1/7½	1/5	1/5	1/5	1/5	1/1
Brighton	1/6	1/6	1/6	1/7½	1/7½	1/7½	1/7½	1/2½
Bristol	1/8	1/8	1/6	1/6	1/6	1/6	1/6	1/1½
Bromsgrove	1/7	1/7	1/8	1/8	1/8	1/8	1/8	1/3½
Bromyard	1/4	1/4	1/7	1/7	1/7	1/7	1/7	1/2½
Bungay	1/3½	1/3½	1/4	1/4	1/4	1/4	1/4	1/0½
Burnley	1/8	1/8	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Burton-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Buxton	1/6½	1/6½	1/8	1/8	1/8	1/8	1/8	1/3½
Cambridge	1/6	1/6	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Canterbury	1/4½	1/4½	1/6	1/6	1/6	1/6	1/6	1/1½
Cardiff	1/8	1/8	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Carlisle	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chatham	1/5½	1/5½	1/8	1/8	1/8	1/8	1/8	1/3½
Chelmsford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cheltenham	1/6½	1/6½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chester	1/8	1/8	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chorley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Cirencester	1/5	1/5	1/5	1/5	1/8	1/8	1/8	1/3½
Clacton	1/5½	1/5½	1/5½	1/5	1/5	1/5	1/4	1/1
Colchester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Cranbrook	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/0½
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Cromer	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Deal	1/4½	1/4½	1/4½	1/4½	1/8	1/8	1/8	1/3½
Denbigh	1/6½	1/6½	1/6½	1/6½	1/4½	1/4½	1/4½	1/0½
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Devizes	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Dewsbury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dorchester	1/4½	1/4½	1/4½	1/4½	1/8	1/8	1/8	1/3½
Dorking	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Dovercourt	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Driffield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Droitwich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Dudley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Eastbourne	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
E. Glam. (Mon. Val.)	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ely	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Exeter	1/7	1/7	1/7	1/7	1/7	1/7	1/6	1/2½
Exmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Fakenham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Felixstowe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Folkestone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Frome	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Glossop	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Gloucester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2
Godalming	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Goole	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Gosport	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2½
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Great Yarmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Guildford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Harpenden	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Harwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Hastings	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hatfield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hednesford	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Hereford	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Herne Bay	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hertford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hitchin	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hoddesdon	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Holt	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hunstanton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Huntingdon	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Isle of Wight	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
Ipswich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Keighley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Kettering	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Kidderminster	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
King's Lynn	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Lancaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leamington Spa	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leighton Buzzard	1/4½	1/4½	1/8	1/8	1/8	1/8	1/8	1/3½
Lichfield	1/6½	1/6½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Lincoln	1/8	1/8	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Littlehampton	1/5	1/5	1/8	1/8	1/8	1/8	1/8	1/3½
Liverpool	1/10	1/10	1/5	1/5	1/5	1/5	1/5	1/1
Llandudno	1/6½	1/6½	1/10	1/11	1/10	1/10	1/10	1/4½
Llanelly	1/8	1/8	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
London:			1/8	1/8	1/8	1/8	1/8	1/3½
12 m. radius	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/4½
12–15 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Lowestoft	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Luton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Macclesfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Maidstone	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Malvern	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Margate	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Market Harb'rough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Matlock	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Melton Constable	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Melton Mowbray	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newark	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Newbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newcastle-ur-Lyme	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
New Forest	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Newmarket	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Norwich	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Nuneaton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oxford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Paignton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Peterborough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Plymouth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3½
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Portsmouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ramsgate	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Reading	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Redcar	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Redditch	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Reigate	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Retford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Ripon	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Rochester	1/5½	1/5½	1/5½	1/5½	1/8	1/8	1/8	1/3½
Rugby	1/8	1/8	1/8	1/8	1/5½	1/5½	1/5½	1/1½
Saffron Walden	1/3½	1/3½	1/3½	1/3½	1/8	1/8	1/8	1/3½
St. Albans	1/6½	1/6½	1/6½	1/6½	1/3½	1/3½	1/3½	11½
St. Helens	1/8	1/8	1/8	1/8	1/6½	1/6½	1/6½	1/2
Sawbridgeworth	1/5½	1/5½	1/5½	1/5½	1/8	1/8	1/8	1/3½
Saxmundham	1/4	1/4	1/4	1/4	1/5½	1/5½	1/5½	1/1½
Scarborough	1/7½	1/7½	1/7½	1/7½	1/4	1/4	1/4	1/0½
Sevenoaks	1/5½	1/5½	1/5½	1/5½	1/7½	1/7½	1/7½	1/2½
Sheffield	1/8	1/8	1/8	1/8	1/5½	1/5½	1/5½	1/1½
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/8	1/8	1/8	1/3½
Sittingbourne	1/4½	1/4½	1/4½	1/4½	1/6½	1/6½	1/6½	1/2
Southampton	1/6½	1/6½	1/6½	1/6½	1/4½	1/4½	1/4½	1/0½
Southend-on-Sea	1/5½	1/5½	1/5½	1/5½	1/6½	1/6½	1/6½	1/2
Southport	1/8	1/8	1/8	1/8	1/5½	1/5½	1/5½	1/1½
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stevenage	1/5½	1/5½	1/5½	1/5½	1/8	1/8	1/8	1/3½
Stockport	1/8	1/8	1/8	1/8	1/5½	1/5½	1/5½	1/1½
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stoke-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stourbridge	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Stourport	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Stowmarket	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Stratford-on-Avon	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stroud	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/5	1/1½
Swaffham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swindon	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Tamworth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Taunton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Thetford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Torquay	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Totnes	1/5	1/5	1/5	1/5	1/5	1/5	1/4½	1/1
Trowbridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Tunbridge Wells	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Uttoxeter	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Walsall	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Wallsend	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Warminster	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Warwick	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wells (Norfolk)	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Welwyn. Gar. City	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Weston-sup.-Mare	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Weymouth	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/1
Whitby	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Winchester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Windsor	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Wisbech	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Woodbridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Worksop	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Worthing	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Wrexham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Wroxham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Wymondham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
York	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½

For rates of wages in the Building Trade in Scotland, see page 198.

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING ETC.

* January 30.—**Brentwood.**—Headquarters.—Erection of, for the Essex Group Anti-Aircraft Searchlight Companies, R.E., for the Territorial Army Association, County of Essex. Contractors (on the King's National Register) wishing to tender should apply to the Secretary, Essex Territorial Army Association, Market-rd., Chelmsford. Dep. £2 2s.

Jan. 30.—**Dartford.**—Reconstruction.—Of Long Reach Smallpox Hospital, Dartford, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Dep. £5.

Jan. 30.—**Edinburgh.**—Convenience.—Also shelter at Granton-sq., Granton, for T.C. B.E.

Jan. 30.—**Glasgow.**—Heating.—At new infant department, Shawlands secondary school, Pollokshaws-rd., Shawlands, for E.C. J. Clark, Director of Education.

Jan. 30.—**Guildford.**—Painting.—Also repairing works, etc., at public baths, Castle-st., for T.C. J. W. Hipwood, B.S.

Jan. 30.—**Hants.**—Alterations and Additions.—To the present Post Office and Telephone Exchange at Petersfield, for the Commissioners, H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

Jan. 30.—**Hull.**—Alterations and Extensions.—To the Head Post Office, Hull, for the Commissioners of H.M.O.W. Contracts Branch, King Charles-st., Westminster, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

Jan. 30.—**Plymouth.**—Painting.—Also other work at Scattered Home, for B.G. W. H. Davy, C., Greenbank-rd.

Jan. 30.—**Swansea.**—Convenience.—Public convenience at Cwmbwrla, adjoining the Forward Movement Church, Gorse-rd., for C.B. J. R. Heath, B.E. and S.

Jan. 30.—**Swansea.**—Convenience.—Public convenience at Llansamlet, adjoining Smiths' Arms P.H., Church-rd., for C.B. J. R. Heath, B.E. and S.

Jan. 30.—**Torquay.**—Additions.—To public conveniences at Vaughan-rd., adjoining pavilion, for T.C. B.S. Dep. £2 2s.

Jan. 30.—**Walsall.**—New Infant School.—Erection of, in Blakenall-lane, Leamore, Walsall, for the Borough Council. J. Taylor, M.Inst.C.E. B.S., Council House, Walsall. Dep. £3 3s.

Jan. 30.—**Wirral.**—Bedrooms.—4 new bedrooms to administrative block at Fever Hospital, Spital, for Joint Hospital Board. Campbell & Honeyburne, architects, Bluecoat-chambers. Dep. £1 1s.

Jan. 31.—**Barnsley.**—Extensions.—To Barnsley and District Holgate Grammar School, Shaw-lane. Dyson, Cawthorne & Coles, architects, 10, Regent-st.

Jan. 31.—**Belfast.**—Installation.—Low-pressure hot water heating system in convalescent department, infirmary, for B.G. R. H. Wilson, C.

Jan. 31.—**Bethnal Green.**—Chapel.—Erection of, in the grounds of Bethnal Green Hospital, Cambridge-rd., London, E.2, for the Guardians. The Clerk, Guardians' Administrative Offices, Bishop's-rd, E.2. Dep. £1.

Jan. 31.—**Birkenhead.**—Alterations.—To Derby-rd. entrance to Union Institution, for B.G. E. Kirby & Sons, architects, 5, Cook-st.

Jan. 31.—**Boston.**—Houses.—20 non-parlour on Westfield-av., for Corporation. D. G. Cockrill, B.S.

Jan. 31.—**Box.**—House.—Police constable's house, for Devon C.C. C.A., 97, Heavitree-rd., Exeter.

Jan. 31.—**Brecon.**—Electric Lighting.—Of Poor Law Institution, for Brecknock B.G. B. L. Pritchard, 21, Castle-st.

Jan. 31.—**Cranbrook.**—Removal.—Of present chapel floor at Union House, and preparation of entirely new floor, and laying of a 6-in. surface water drain, with catch-pits and ventilating shaft, and for the making of road surface, for B.G. F. G. Bayfield, The Union House.

Jan. 31.—**Dublin.**—Reconstruction.—Of North block of Four Courts, for Commissioners of Public Works. T. Cassedy, secretary, Dublin. Dep. £1.

Jan. 31.—**Durham.**—Elementary School.—Erection and completion of, at Billingham, to accommodate 384 children; and also an elementary school at Ludworth, to accommodate 264 children, required by the County Council. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

Jan. 31.—**Dursley.**—Extensions.—Of premises of Dursley Secondary School, for Gloucestershire E.C. R. S. Phillips, F.R.I.B.A., County Education Architect. Dep. £5 5s.

Jan. 31.—**Farnborough.**—Houses.—8, at Morris-rd., for U.D.C. J. E. Hargreaves, architect for works. Dep. £1 1s.

Jan. 31.—**Milltown.**—Houses.—58, for Irish Sailors and Soldiers Land Trust. Chief Clerk, 30, Lower Fitzwilliam-st., Dublin. Dep. £5 5s.

Jan. 31.—**Nenagh.**—Houses.—26, at O'Growney-st., for U.D.C. O. L. D. Gill, engineer.

Jan. 31.—**Ossett.**—Installation.—Of Electric Light at Grammar School, for West Riding E.C. Education Department, County Hall, Wakefield.

Jan. 31.—**Plymouth.**—Repairs.—To 49, Well-st., for C.B. R. J. Fittall, T.C.

Jan. 31.—**Rochdale.**—Demolition.—Of buildings comprising Broadley Wood Mill, Broadley, near Rochdale, and for removal of all materials, for T.C. Wm. Henry Hickson, T.C.

Jan. 31.—**Wem.**—Hall.—Cheese Hall, Noble-st., for U.D.C. S. Dep. £1 1s.

* January 31.—**Walthamstow.**—School.—Proposed erection of (to accommodate 400) to be erected on the Billet-rd. site for the Education Committee. H. Prosser, F.R.I.B.A., Architect to the Committee, High-st., Walthamstow, E.17. Dep. £2 2s.

Jan. 31.—**Westmorland.**—Additions.—Alterations and additions to police cells, at (1) Appleby, (2) Kendal (County Station), (3) Kirkby Lonsdale, (4) Kirkby Stephen, (5) Shap, for C.C. C. E. Hines, C.S., 12, Lowther-st., Kendal.

Jan. 31.—**York.**—Wall.—Ferro-concrete sheet piled river wall, approximately 800 ft. in length, on east side of Naburn Cut, for trustees of Ouse Navigation. E. Fewster, River Manager, Naburn Locks.

Feb. 1.—**Ashford.**—Station.—Pumping station at Henwood water works, Hythe-rd., for U.D.C. Wm. Terrill, S.

Feb. 1.—**Athlone.**—Houses.—Four houses, semi-detached, and detritus tank and a septic tank, at Battery site, for U.D.C. P. J. O'Loughlin, Town S. Dep. £2 2s.

Feb. 1.—**Bembridge.**—Conveniences.—At High-st., for Isle of Wight R.D.C. E. L. Smith, architect, High-st., Sandown. Dep. £2 2s

Feb. 1.—**Brierfield.**—Alterations.—To Town Hall annexe, for T.C. B.S. Dep. 10s. 6d.

Feb. 1.—**Bucksburn.**—Houses.—2 workmen's houses at Chapel of Stoneywood, for Governors of North of Scotland College of Agriculture. A. A. Prosser, secretary, Agricultural College Office, 41½, Union-st., Aberdeen.

Feb. 1.—**Clacton.**—Pavilion.—Tennis, bowls and golf pavilion on Council's recreation ground, for U.D.C. S.

Feb. 1.—**Hoyland.**—Houses.—Also business premises at Hoyland Common, nr. Barnsley. J. R. Wilkinson, L.R.I.B.A., 15, Regent-st., Barnsley.

Feb. 1.—**Kirkcaldy.**—Fencing.—Electric lighting and fencing of 10 two-storey cottage-type houses, for D.C. Geo. B. Deas, architect, Central-chambers.

Feb. 1.—**Wednesbury.**—Installation.—Re-modelling of existing installation in County Technical College, and for installation of electric light and power in an extension of College, for Staffordshire E.C. Moffett Rosher & Mann, consulting engineers, Union-chambers, Temple-row, Birmingham. Dep. £5 5s.

Feb. 1.—**Woolpit.**—House.—Teacher's house on a site adjoining Woolpit Council school, for West Suffolk E.C. A. Ainsworth Hunt, C.A., 51a, Abbeygate-st., Bury St. Edmunds.

Feb. 2.—**Lichfield.**—Houses.—Four non-parlour type in Rotten-row, for T.C. Norman Auty, City S. Dep. £2 2s.

Feb. 2.—**Manchester.**—Heating.—Providing and fixing low-pressure heating apparatus at Municipal School of Art, Chorlton-on-Medlock, for E.C. P. M. Heath, T.C. Dep. £1 1s.

Feb. 2.—**Manchester.**—Store.—Also mess room, at Clayton Hall recreation ground, for T.C. City Architect. Dep. £1 1s.

Feb. 2.—**Southampton.**—Manual Instruction and Cookery Room.—Erection of, at Farnborough Queen's-rd. Council school, for the County Council. A. L. Roberts, County Architect, The Castle, Winchester. Dep. £1 1s. by cheque payable to the Hants County Council, and crossed "Lloyds Bank, Ltd., Winchester," or particulars will not be sent.

Feb. 2.—**Wanstead.**—Wall.—Retaining wall in Woodford-rd., for U.D.C. E. and S.

Feb. 3.—**Chatteris.**—Houses.—16 non-parlour type, in Doddington-rd., for U.D.C. Solden Hipwell, architect, 19, New-rd. Dep. £2 2s.

Feb. 3.—**Eastbourne.**—Floors.—Two reinforced concrete floors in existing building at Corporation Depot, Bedfordwell-rd., for C.B. L. Roseveare, B.S.

Feb. 3.—**Portsmouth.**—Additions.—Also alterations of roof to present windscreen round band stand on South Parade Pier, for T.C. City E. Dep. £1.

Feb. 3.—**Rochester.**—Houses, etc.—Erection, drainage and site works, etc., of 75 houses (7 parlour and 68 non-parlour), for the Corporation. William Law, A.M.I.C.E., City Surveyor, Guildhall, Rochester. Dep. £3 3s.

Feb. 3.—**Swadlincote.**—Houses.—Two ministers' houses in Hastings-rd., Swadlincote, for Trustees of the Woodville and Swadlincote Wesleyan Circuit, etc. A. Clark, architect, Wood-st., Church Gresley. Dep 10s. 6d.

Feb. 3.—**Uxbridge.**—Alterations and Additions.—To the existing dining room at the Union Institution, Hillingdon, near Uxbridge, for the Guardians of the Uxbridge Union. Hubert F. Bateman, Warwick-rd., West Drayton, Middlesex. Dep. £2 2s.

*Feb. 3.—**West Ham.**—Infant School.—Erection of, adjoining the South Hallsvile school, Agate-st., Tidal Basin, for the Education Committee. John H. Jacques, L.R.I.B.A., Architect to the Committee, 61, West Ham-lane, Stratford, E.15. Dep. £2.

Feb. 4.—**Chapel-en-le-Frith.**—Houses.—8 non-parlour type, at Ashbourne-lane, for R.D.C. T. Dinsdale, Inspector and Surveyor. Dep. £2 2s.

Feb. 4.—**Warwick.**—Alterations.—Structural alterations, concrete floors, drainage, etc., necessary for conversion of saw mill, Campion-terr., Leamington, into a garage, for R.D.C. S., 35, Oxford-st., Leamington Spa.

Feb. 4.—**Wednesbury.**—Houses.—80 non-parlour type, on Mesty Croft site, for T.C. A. Booth, B.E. and S. Dep. £2 2s.

Feb. 6.—**Bethnal Green.**—Superstructure and execution of other works relating to proposed public baths and washhouses at Old Ford-rd., for the Borough Council. A. E. Darby, A.M.I.C.E., Borough Engineer and Surveyor, Town Hall, Cambridge-rd., Bethnal Green, E.2. Dep. £5.

Feb. 6.—**Caernarvon.**—Rebuilding.—Portion of wall at Victoria Dock, for Harbour Trust. L. L. Jones, E. and S., Lloyds Bank-chambers.

*Feb. 6.—**Hampstead.**—Roof Work.—Reconstruction of a portion of a roof at the Town Hall, for the Hampstead B.C. J. E. Swindlehurst, M.A., A.M.I.C.E., Borough Engineer, Town Hall, Haverstock Hill, N.W.3.

Feb. 6.—**Horsham.**—Houses.—Erection of 72 on the Millthorpe estate, Littlehaven-lane, Roffey, for the U.D.C. C. G. Atkinson, Council's Surveyor, Town Hall-chambers, Horsham. Dep. £3 3s.

Feb. 6.—**Leslie.**—Houses.—30, at Maryfield site, for T.C. Walker & Pride, architects, Church-sq., St. Andrews. Dep. £2 2s.

Feb. 6.—**Macclesfield.**—Houses.—20, at Dickens-lane, Poynton-with-Worth, near Stockport, for R.D.C. G. Clayton, architect, 4, Wellington-st., Stockport. Dep. £2 2s.

Feb. 7.—**Greasbro'.**—Demolition.—3 cottages and clearance of sites, and erection of 2 boundary stone walls, total length 120 yards, at foot of Church-st., also demolition and re-erection of public urinal at foot of Church-st., for U.D.C. J. H. Jackson, C.

Feb. 7.—**Tamworth.**—Houses.—52 non-parlour type; and construction of about 400 yds. of roadway, consisting of tarmacadam carriage-way and paths, grass verges, kerbing, etc., and about 1,100 feet of 9 in. and 6 in. stoneware sewers, together with manholes, gullies, etc., for T.C. A. O. Marshall, B.E. and S.

Feb. 8.—**Anagry.**—Adaptation.—Of a building at Anagry, Co. Donegal, as a station, for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works, Dublin. Dep. £1.

Feb. 8.—**Belfast.**—Converting.—Existing premises in Oxford-st. into public sanitary conveniences, for C.B. City S.

Feb. 8.—**Poplar.**—Nurses' Messroom.—Erection of, at St. Andrew's Hospital, Bromley-by-Bow, for the Poplar Board of Guardians. Harley Heckford, M.Inst.C.E., architect, Council Offices, High-st., Poplar. Dep. £3 3s.

Feb. 8.—**Sittingbourne.**—New Hospital.—Erection of new hospital Bell and Highsted-rds., Sittingbourne, for the District Cottage Hospital Committee. G. H. Potter, 76, High-st., Sittingbourne.

*Feb. 8.—**Swansea.**—Houses.—Erection of a further 50 at the "Mayhill" estate, Swansea, for the County B.C. Ernest E. Morgan, A.R.I.B.A., Borough Architect, 3, Prospect-pl., Swansea. Dep. £3 3s.

*Feb. 9.—**Epping.**—Houses.—Erection of 7 pairs, at Hobbs Cross-rd., Harlow, and 4 pairs at Potter-st., Harlow, for the R.D.C. W. Beard, Building Surveyor, Beechcroft, Harlow. Dep. £1 1s.

Feb. 9.—**Manchester.**—Houses.—350, on Blackley estate, for T.C. P. M. Heath, T.C. Dep. £2 2s.

Feb. 9.—**Stepney.**—Wells, etc.—Construction of wells, caissons in River Thames, circulating water tubes, etc., at Limehouse Electricity Generating Station, Narrow-st., E., for the B.C. of Stepney. B.E., Bernard J. Belsher, M.I.C.E., M.I.M.E., Municipal Offices, Raine-st., E.1, between 10 a.m. and noon. Dep. £10 (Treasury notes).

*Feb. 10.—**Croydon.**—Additions.—Reconstruction of, and additions to, Women's Slipper Baths and Laundry at the Central Baths, Scarbrook-rd., for the Croydon B.C. Borough Engineer, Town Hall, Croydon. Dep. £2 2s.

Feb. 10.—**Greetland.**—Installation.—Of electric light at Council school, for West Riding E.C. P. H. Swire, Education Office, Huddersfield-rd., Elland.

Feb. 10.—**Ireland.**—Improvements.—For (1) erection of National School at Killala, Co. Mayo; (2) improving Glencastle National School, Co. Mayo; and (3) improving Pulathomas National School, Co. Mayo, for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works, Dublin. Dep. £1 each.

Feb. 10.—**Malmesbury.**—Drainage.—Reconstruction of drainage system and other small structural works at Institution, for B.G. Parker Pearson and Ross Hooper, engineers, Dallas Chambers, Chippenham. Dep. £2 2s.

Feb. 10.—**Whitby.**—Theatre Alterations.—Alterations and additions to the Spa Theatre, including the construction of a balcony for the U.D.C. J. R. Seward, Assoc.M.Inst.C.E., M.Inst.M.&Cy.E., Engineer and Surveyor, Council Offices, Whitby. Dep. £2 2s.

Feb. 11.—**Aberystwyth.**—Houses.—32 on housing estate at Penparke, for T.C. L. Jones, B.S. Dep. £2 2s.

Feb. 11.—**Rochford.**—Houses.—20 non-parlour type, in Thundersley, for R.D.C. A. C. Madge, S. Dep. £1 1s.

* February 11.—**Southend-on-Sea.**—Houses and Flats.—Erection and completion of 107 houses and 12 flats at Eastwood-lane, for the Corporation. Robt. H. Dyer, Borough Engineer, Southend-on-Sea. Dep. £2.

*Feb. 11.—**St. Pancras.**—Alterations.—Builders' work in connection with alterations to buildings for meter shops, for the B.C. Electrical Office, 57, Pratt-st., N.W.1. Dep. £1.

*Feb. 13.—**Bramhall.**—Telephone Exchange.—Erection of, at Bramhall, for the Commissioners of H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

Feb. 13.—**Caterham.**—Fire Station.—For U.D.C. S. Dep. £1 1s.

*Feb. 13.—**Croydon.**—Houses.—Erection of 96, at Mitcham-rd. estate, for the Croydon B.C. Borough Engineer, Town Hall, Croydon. Dep. £2 2s.

*Feb. 13.—**London.**—New Mezzanine Floor.—Construction of, at General Post Office South, Queen Victoria-st., for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

Feb. 13.—**Whitstable.**—Conversion.—Of existing buildings into disinfecting station, etc., and erection of a new fire station at Horsebridge-rd., for U.D.C. J. Dunn, Surveyor and Water Engineer. Dep. £1 1s.

* February 14.—**Barking, Essex.**—Houses and Flats.—Erection 120 houses and 78 flats, in 13 blocks, for the Barking Town U.D.C. Council's Architect, C. J. Dawson, F.R.I.B.A., Clock House Chambers, East-st., Barking. Dep. £5.

*Feb. 14.—**Deal.**—Telephone Exchange.—Erection of, at Deal, Kent, for the Commissioners of H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

Feb. 14.—**Kidderminster.**—Centre.—Domestic subjects centre in Castle-rd., for T.C. J. Hawcroft. B.E. and S.

*Feb. 14.—**Reigate.**—Cottages.—Erection of 8 non-parlour cottages in Outwood-lane, Chipstead, for the Reigate R.D.C. Offices of the District Surveyor, 48, High-st., Reigate. Dep. £3 3s.

*Feb. 14.—**Stanmore.**—Telephone Exchange.—Erection of, at Stanmore, for the Commissioners of H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

*Feb. 14.—**Workington.**—Employment Exchange.—Erection of, at Workington, Cumberland, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

Feb. 15.—**Birkenhead.**—Overhead Gas Works Sidings.—Reconstruction of railway sidings at Birkenhead, for the Corporation. Gas Engineer, Harold E. Stone, Gas Works, Thomas-st., Birkenhead. Dep. £2 2s.

* February 15.—**Brentford.**—Alterations.—Building work involving alterations necessary to provide the site for a new Weighbridge at the Institution at Isleworth for the Guardians. F. E. Harmsworth, clerk, Trolands House, 34, Twickenham-rd., Isleworth.

*Feb. 16.—**Fulham.**—Nurses' Home.—Erection of, at the hospital, Fulham Palace-rd., W.6, for the Guardians of the Parish of Fulham. E. J. Mott, Clerk to the Guardians, 129, Fulham Palace-rd., London, W.6. Dep. £5.

* February 21.—**London.**—Works and Repairs.—Execution of ordinary works and repairs to the Buildings in charge of the Commissioners, H.M.O.W., in the London district during the period from March 31, 1928—April 3, 1931. Contracts Branch, H.M.O.W., King Charles-st., London, S.W.1. Dep. £2 2s. (cheques payable to the Commissioners).

Feb. 25.—**Egypt.**—Excavation.—Of approximately six and a half millions cubic metres of earthwork in the remodelling of the Fouadia Canal in Naghamadi district, Upper Egypt, for Ministry of Public Works.

Feb. 28.—**Poplar.**—Weighbridge.—Installation of a new weighbridge, including builders' work in connection therewith, at St. Andrew's Hospital, Bromley-by-Bow, for the Poplar Board of Guardians. Harley Heckford, M.Inst.C.E., architect, Council Offices, High-st., Poplar. Dep. £1 1s.

——.—**Caernarvon.**—House.—New house at Caernarvon and Llanfaglan. Watkin W. Jones, architect and surveyor, Bryn Afon, Caernarvon.

——.—**Castleford.**—Additions.—Also alterations, to Carlton Hotel, Carlton-st., for Bentley's Yorkshire Breweries, Ltd. Garside & Pennington, architects and surveyors, Ropergate, Pontefract.

——.—**Crook.**—Garage.—In Bankfoot Recreation Ground, for Peases West Welfare Committee. Secretary.

——.—**Dewsbury.**—Painting.—Calder Bank Mills estate. E. Fox & Sons, Ltd., Calder Bank Mills.

——.—**Tottenham.**—Range.—Miniature rifle range, for Middlesex Territorial Army Association. S. W. Cranfield, architect, 7, Bedford-sq., W.C.1.

MATERIALS, ETC.

Jan. 30.—**Cheltenham.**—Cement, etc.—For Corporation J. S. Pickering, B.E.

Jan. 30.—**Cowes.**—Road Materials.—For U.D.C. J. W. Webster, E. and S.

Jan. 30.—**Croydon.**—Granite, etc.—For C.B. Borough Road Surveyor.

Jan. 30.—**Finchley.**—Granite.—For U.D.C. P. T. Harrison, E. and S.

Jan. 30.—**Herefordshire.**—Highway Materials.—For C.C. G. H. Jack, C.S.

Jan. 30.—**London.**—Road Materials.—For Hampstead B.C. T.C.

Jan. 30.—**Melton Mowbray.**—Road Materials.—For U.D.C. W. H. Jarvis, S.

Jan. 30.—**Ongar.**—Granite.—For R.D.C. H. C. Phillips, District S.

Jan. 30.—**Walsall.**—Highway Materials.—For R.D.C. W. P. Young, District S.

Jan. 30.—**West Suffolk.**—Highway Materials.—For C.C. E. H. Bond, C.S.

Jan. 31.—**Alton.**—Road Materials.—For R.D.C. A. O. Crew, S.

Jan. 31.—**Canterbury.**—Road Materials.—For T.C. P. H. Warwick, City S.

Jan. 31.—**Dublin.**—Pipes.—330 yds. of 15-in. diameter cast-iron pipes and special castings, for C.B. G. J. Sherlock, T.C.

Jan. 31.—**Durham.**—Road Materials.—For C.C. W. J. Merrett, C.E. and S., 43, Old Elvet, Durham.

Jan. 31.—**East Elloe.**—Road Materials.—For R.D.C. S. S. Mossop, Junr., C

Jan. 31.—**Farnham.**—Cement.—For U.D.C. L. H. Starling, S.

Jan. 31.—**Isle of Wight.**—Granite.—For C.C. A. J. A. Harris, Highways S.

Jan. 31.—**Kettering.**—Gravel, etc.—For R.D.C. H. J. Parker, S.

Jan. 31.—**London.**—Road Materials.—For H.M.O.W. Contracts Branch, King Charles-st., S.W.1.

Jan. 31.—**Perth.**—Drainage Materials.—For D.C. of C.C. W. J. V. Bryce, District Road Surveyor.

Jan. 31.—**Thrapston.**—Road Materials.—For R.D.C. J. G. Murray, E. and S.

Feb. 1.—**Amersham.**—Road Materials.—For R.D.C. A. H. Prince, District Surveyor, High-st.

Feb. 1.—**Boston.**—Granite.—For R.D.C. A. Barton, S.

Feb. 1.—**Chingford.**—Road Materials.—For U.D.C. E. and S.

Feb. 1.—**Crayford.**—Road Materials.—For U.D.C. F. Leary, E. and S.

Feb. 1.—**East Dereham.**—Road Materials.—For U.D.C. W. A. Norris, E. and S.

Feb. 1.—**Folkestone.**—Portland Cement.—For T.C. A. E. Nichols, B.E.

Feb. 1.—**London.**—Road Materials.—For Southwark B.C. P. H. Gray, T.C.

Feb. 1.—**Welwyn Garden City.**—Road Materials.—For U.D.C. Capt. W. E. James, S.

Feb. 1.—**Wood Green.**—Granite, etc.—For U.D.C. E. and S.

Feb. 2.—**Gillingham.**—Road Materials.—For T.C. J. L. Redfern, B.E. and S.

Feb. 2.—**Stockport.**—Highway Materials.—For C.B. H. Hamer, B.S.

Feb. 2.—**Tring.**—Road Materials.—For U.D.C. H. N. Hedges, S.

Feb. 3.—**Devon.**—Highway Materials.—For Northern Division of C.C. R. M. Stone, C.S., 9a, High-st., Barnstaple.

Feb. 3.—**East Barnet Valley.**—Highway Materials.—For U.D.C. H. York, E. and S.

Feb. 3.—**London.**—Highway Materials.—For Kensington B.C. T.C.

Feb. 3.—**Manchester.**—Castings.—Ventilating grids and other castings, for T.C. J. Irvine, Manager of Drainage Branch, 1, Mount-st.

Feb. 4.—**Hertfordshire.**—Granite, etc.—For C.C. A. E. Prescott, C.S.

Feb. 4.—**Huntingdonshire.**—Road Materials.—For C.C. H. Leete, C.S.

Feb. 4.—**Mitcham.**—Cement, etc.—For U.D.C. S.

Feb. 4.—**Newmarket.**—Granite.—For U.D.C. W. H. Eley, E. and S.

Feb. 4.—**Tadcaster.**—Road Material.—For R.D.C. G. A. Bromet, C.

Feb. 4.—**Tyldesley-with-Shakerley.**—Granite Concrete Flags.—For U.D.C. F. E. Jones, S.

Feb. 4.—**Wangford.**—Road Materials.—For R.D.C. Clerk.

Feb. 6.—**Bridgwater.**—Road Materials.—For T.C. H. P. Bishop, B.E. and S.

Feb. 6.—**Cornwall.**—Roadstone.—For C.C. E. H. Collcutt, C.S.

Feb. 6.—**Hendon.**—Highway Materials.—For U.D.C. A. O. Knight, E. and S.

Feb. 6.—**Ilford.**—Road Materials.—For T.C. H. Shaw, B.E. and S.

Feb. 6.—**Little Hulton.**—Highway Materials.—For U.D.C. J. H. Heyes, C.

Feb. 6.—**Sunbury-on-Thames.**—Limestone, etc.—For U.D.C. H. F. Coales, E. and S.

Feb. 6.—**Sutton-in-Ashfield.**—Tarmacadam.—For U.D.C. W. Burn, S.

Feb. 7.—**Cheshunt.**—Granite, etc.—For U.D.C. J. E. Sharpe, E. and S.

Feb. 7.—**Trowbridge.**—Chippings.—For U.D.C. G. W. J. Clark, E. and S.

Feb. 7.—**Wing.**—Granite, etc.—For R.D.C. J. L. A. Watson, S., 60, New-rd., Linslade, Leighton Buzzard.

Feb. 8.—**Blackburn.**—Highway Materials.—For C.B. H. M. Webb, B.E.

Feb. 8.—**Caterham.**—Road Materials.—For U.D.C. D. E. Biart, C.

Feb. 8.—**Dagenham.**—Tarmacadam.—For U.D.C. F. W. Allen, C.

Feb. 8.—**Driffield.**—Road Materials.—For R.D.C. C. H. Hines, S.

Feb. 8.—**Escrick.**—Limestone, etc.—For R.D.C. J. R. Hudson, "Ashdene," Dunnington, York.

Feb. 8.—**London.**—Building Materials.—For Hackney B.C. P. Holt, B.E. and S.

Feb. 8.—**London.**—Builders' Materials.—For Shoreditch B.C. B.S.

Feb. 8.—**Middlesex.**—Road Materials.—For C.C. A. Dryland, C.E.

Feb. 9.—**Johannesburg.**—Tar.—2,600 tons of tar or tar substitute, for T.C. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (Reference No. BX. 4121.)

Feb. 9.—**Leyton.**—Builder's Materials, etc.—For T.C. B.E. and S.

Feb. 9.—**North Riding of Yorkshire.**—Road Materials.—For C.C. C.S.

Feb. 9.—**Penge.**—Cement.—For U.D.C. S.

Feb. 11.—**Eastbourne.**—Broken Granite.—For R.D.C. W. Walker, S.

Feb. 11.—**Horsforth.**—Granite, etc.—For U.D.C. J. E. Aldersley, S.

Feb. 11.—**Swansea.**—Highway Materials.—For C.B. B.S.

Feb. 11.—**Thirsk.**—Highway Materials.—For R.D.C. J. W. Lupton, S.

Feb. 13.—**South Stoneham.**—Road Materials.—For R.D.C. W. R. Cowall, S.

Feb. 13.—**Southport.**—Road Materials.—For C.B. A. E. Jackson, B.E. and S.

Feb. 14.—**London.**—Paving Materials.—For Deptford B.C. T.C.

Feb. 15.—**Halifax.**—Highways Materials.—For C.B. B.E.

Feb. 15.—**Horncastle.**—Road Materials.—For R.D.C. J. S. Derbyshire, S.

Feb. 15.—**Warwickshire.**—Road Materials.—For C.C. D. H. Brown, C.S.

Feb. 16.—**London.**—Road Materials.—For St. Marylebone B.C. T.C.

Feb. 16.—**Nottingham.**—Builder's Materials, etc.—For T.C. T. Wallis Gorden, City E. and S.

Feb. 17.—**Doncaster.**—Tarmacadam, etc.—For R.D.C. W. R. Crabtree, S.

Feb. 18.—**Felixstowe.**—Cement, etc.—For U.D.C. H. Clegg, S.

Feb. 20.—**London.**—Cast Iron Pipes.—For M.W.B. Chief Engineer.

Feb. 20.—**Maldens and Coombe.**—Builder's Materials.—For U.D.C. S.

Feb. 21.—**Coventry.**—Builder's Materials.—For T.C. E. H. Ford, City E. and S.

Feb. 21.—**Tottenham.**—Road Materials.—For U.D.C. E. Townson, C.

Feb. 22.—**Caistor.**—Road Materials.—For R.D.C. G. Riley, S.

Feb. 28.—**Battersea.**—Materials, etc.—Tenders for materials, etc., for 3, 6 and 12 months from April 1 next, for the Borough Council. Town Hall, Lavender Hill, S.W.1.

ENGINEERING, IRON AND STEEL.

Jan. 30.—**Pwllheli.**—Walls.—Concrete walls, new screening chambers, outlet pipes and other improvements at Murcwymp and Glasfryn springs; providing, hauling, laying and jointing of about 2,000 yds. of 6-in. and 4-in. cast-iron spigot and Socket water pipes, together with all sluice valves, air valves, fittings, and other works connected therewith, for Corporation. C. F. Farrington, engineer, M.Inst.C.E., Trinity-sq., Llandudno. Dep. £3 3s.

Jan. 30.—**Rhyl.**—Filters.—Installation of pressure filters, for U.D.C. O. P. Cronshaw, Water Engineer. Dep. £2 2s.

Feb. 2.—**Dunbar.**—Pool.—Concrete paddling pool and other relative works, for T.C. Duncan W. Murdoch, B.S., 17a, High-st.

Feb. 2.—**Rhondda.**—Steelwork.—40 tons of bridge steelwork, for U.D.C. T. Taylor, E. and S.

Feb. 3.—**London.**—Girder Bridges.—For Bombay, Baroda and Central India Railway Co. S. G. S. Young, secretary, The White Mansion, 91, Petty France, S.W.1.

Feb. 13.—**Blackburn.**—Bridge.—Over Leeds and Liverpool Canal at Hall-st., for C.B. H. M. Webb, Borough and Water Engineer. Dep. £3 3s.

Feb. 15.—**London.**—Steelwork.—790 tons structural steel work for ironfoundry, together with corrugated asbestos sheets, patent glazing with wired glass, galvd. C.I. piping and fencing pales, etc., etc., for Madras and Southern Mahratta Rly. Co. Directors, 25, Buckingham Palace-rd., S.W.1.

Feb. 23.—**Newry.**—Bridge.—Single-leaf steel swing bridge over canal at Godfrey Bridge, for U.D.C. C. Blaney, Town Surveyor. Dep. £1 1s.

ROAD, SEWERAGE, AND WATER WORKS.

Jan. 30.—**Coseley.**—Sewerage.—11,080 yds. of stoneware and cast-iron sewers, varying in size from 6-in. to 15-in. diameter, manholes, and other appurtenant works at Coseley, for U.D.C. Berrington & Son, engineers, Prudential-chambers, Lichfield-st., Wolverhampton. Dep. £5 5s.

Jan. 30.—**Farnworth.**—Sewering.—Building of manholes, sewering, etc., in back St. Germain-st., back Harrowby-st., back Worsley-rd., and back Cleland-st., for U.D.C. F. Ashton, E. and S. Dep. £2 2s.

Jan. 30.—**Finchley.**—Footpath.—In Nether-st., for U.D.C. T. Harrison, E., 9, The Hawthorns, Regent's Park-rd., N.3. Dep. £1.

Jan. 30.—**Finchley.**—Improvements.—In Greenlane, by Manor Cottage P.H., for U.D.C. T. Harrison, E., 9, The Hawthorns, Regent's Park-rd., N.3. Dep. £1.

Jan. 30.—**Finchley.**—Sewer.—Surface water sewer works near Avondale-rd. and Clifford-rd., East Finchley, for U.D.C. T. Harrison, E., 9, The Hawthorns, Regent's Park-rd., N.3. Dep. £1.

Jan. 30.—**Renfrew.**—Setts.—First or Upper District.—Metal sections of roads in the first or upper district, also for borders, setts and chips for Renfrew C.C. R. Drummond, Road Surveyor, 18, Forbes-place, Paisley.

Jan. 30.—**Shardlow.**—Sewers.—Six branch sewers, comprising 533 yds. of 9-in. stoneware pipes and 992 yds. of 6-in. stoneware pipes, with appurtenant manholes, at Chaddesden, for R.D.C. Elliott and Brown, Chartered Civil Engineers, Burton Buildings, Parliament-street, Nottingham. Dep. £2 2s.

Jan. 30.—**Shoreham.**—Sewer.—Laying 9-in. sewer in Connaught-av., also for 9-in. and 6-in. sewers in Upper-rd., also for 9-in. sewer in Erringham-av., also for 6-in. sewer in Mill-av., for U.D.C. Town S.

Jan. 30.—**Tilbury.**—Road.—Reconstruction in reinforced concrete of roadway and approaches of Arrols-bridge from Dock-rd. to Ferry-rd. (approximately 5,450 superficial yds.), together with the provision and laying of artificial stone slab paving kerbing and gullies, etc., for U.D.C. S. A. Hill-Willis, E. and S. Dep. £3 3s.

Jan. 30.—**Totnes.**—Road.—878 super. yds., for T.C. B.S. Dep. £1 1s.

Jan. 30.—**Woking.**—Making-up.—Park-rd., (East), length 770 yds., approximately: Park-rd., (West), length 303 yds., approximately; Thornash-rd., length 300 yds., approximately; Manor-rd., length 140 yds., approximately; Horsell-rise, length 380 yds., approximately; for U.D.C. G. J. Wooldridge, E. and S.

Jan. 31.—**Carlisle.**—Main.—Laying of approximately 975 yds. of 3-in. cast-iron water main near to and in village of Aglionby, for R.D.C. F. Barker, S., 5, Victoria-place.

Jan. 31.—**Easington.**—Making-up.—(a) Easington Colliery—Back Seaside-lane South, side street (No. 2), Bede-st., side street (No. 3), Bede-st., back Bede-st., Seaside-lane to Crawlaw-rd. (b) Wheatley-hill—Back Cemetery-rd. East and side street, back Cemetery-rd. West and three side streets. (c) Seaham—Cross-st., between Model-st. and Clara-st. back, for R.D.C. R. Urwin Harper, Highways Surveyor, Castle Eden, Co. Durham.

Jan. 31.—**Epsom.**—Sewers.—Iron and stoneware pipe sewers, manholes, etc., in Rookery Hill, Farm-lane and Park-lane, Ashtead Park estate, for R.D.C. F. A. Pratley, S.

Jan. 31.—**Farnham.**—Making up.—Surface water sewerage, kerbing and making up of Bullers-rd., about 540 ft. in length, for U.D.C. L. H. Starling, E. and S.

Jan. 31.—**Guildford.**—Improvements.—Widening and improving Sherbourne-lane, Albury, for a length of approximately 900 yds., for R.D.C. J. Anstee, E. and S.

Jan. 31.—**Rathmines and Rathgar.**—Pipes.—43 tons of 3-in. cast-iron pipes, for U.D.C. S.

Feb. 1.—**Glacton.**—Reconstruction.—Of Coppins-rd., for U.D.C. S.

Feb. 1.—**Haslemere.**—Making-up.—Courts Hill-rd., 630 yds., and Courts Mount-rd., 430 yds., for U.D.C. C. A. Best, S. Dep. £2 2s.

Feb. 1.—**Haywards Heath.**—Sewers.—967 lin. yds. of 12-in. and 24-in. surface water sewers in Perrymount and Mill Green-rds., for U.D.C. G. Plummer, S.

Feb. 1.—**Hendon.**—Kerbing.—Also making-up Station-rd., and Cambridge-rd., for R.D.C. H. W. Rackham, S. Dep. £1 1s.

Feb. 1.—**Hendon.**—Improvements.—At Manor Park-crescent, Edgware, for length of approximately 100 yds., including kerbing, formation of tar-paved footway, tarmacadam carriageway and extension of 9-in. surface water drain, for R.D.C. H. W. Rackham, E. and S. Dep. £1 1s.

Feb. 1.—**Hove.**—Paving.—Making-up roadway, laying new channelling and paving, and other works in Braemore-rd., for T.C. B.S.

Feb. 1.—**Liverpool.**—Roads.—And sewers works on various housing estates, for T.C. Walter Moon, T.C. Dep. £1 1s.

Feb. 1.—**Peebles.**—Pipes.—Providing and delivering 915 tons of dry sand cast-iron pipes from 9 to 4 in. diameter, for T.C. J. and A. Leslie and Reid, C.E., 72a, George-st., Edinburgh. Dep. £1.

Feb. 1.—**Wembley.**—Making up.—Brookfield-cres., Kenton, approximate length 175 yds.; Thurlow-gdns., Wembley, approximate length 200 yds.; Fairview-av., Wembley, approximate length 100 yds., for U.D.C. C. R. W. Chapman, E. and S., Dep. £1 1s.

Feb. 2.—**Keynsham.**—Making-up.—Sherwell-rd., Brislington, about 290 yds., in length, on Council's housing estate, with water-bound macadam (surface dressed), kerbing, tarmacadam footways, and incidental works, for R.D.C. H. W. Argile, Building Surveyor. Dep. £1 1s.

Feb. 2.—**North Bromsgrove.**—Widening.—Widening, foundation work, kerbing, channelling and surfacing, etc., of Gunner and Callowbrook-lanes, and construction of street No. 7, for U.D.C. G. W. Booth, S. Dep. £2 2s.

Feb. 3.—**Manchester.**—Drainage.—Plumber's work in connection with drainage of houses and other premises, for T.C. J. Irvine, Manager of the Drainage Branch, 1, Mount-st. Dep. £1 1s.

Feb. 4.—**Buckfastleigh.**—Sewer.—Laying of 9-in. sewer and 3-in. water main in Plymouth-rd., for U.D.C. Surveyor, Fore-st.

Feb. 4.—**Manchester.**—Sewer.—Construction of Manchester and Salford Joint Relief Sewer in Cheetham and Broughton, for T.C. City E. Dep. £3 3s.

Feb. 4.—**Nottingham.**—Pipework.—Exhaust water and other pipework, valves, tanks, etc., for Corporation. Preece, Cardew & Rider, 8, Queen Anne's Gate, S.W.1. Dep. £2 2s.

Feb. 6.—**Chingford.**—Making-up.—Beresford-rd. (part of), Douglas-rd., Victoria-rd. (part of), Hampton-rd. (part of), for U.D.C. S. J. Hellier, E. and S. Dep. £1 1s.

Feb. 6.—**Dundee.**—Main.—4,200 ft. of 10-in. internal diameter steel tubes, lined centrifugally with bituminous composition, and with ends prepared for victaulic joints, for T.C. George Baxter, Jr., Waterworks Engineer.

Feb. 6.—**Ennis.**—Improvements.—In connection with the Ennis Waterworks, for U.D.C. P. J. Meghen, B.E., Commissioner, Town Hall, Ennis, Co. Clare.

Feb. 6.—**Pembroke.**—Development of following sites, including excavation or filling and formation of the roads, laying down of concrete roads and concrete side-walks; also sewers and water mains, for sites at Newbridge-av., "Willfield," Sandymount-av.; Belmont site, Donnybrook; and laying down of concrete roads only for sites at Irishtown-rd. (Fairview); Havelock, Bath-av.; Meleady's-field, Bath-av., for U.D.C. N. Montgomery, B.S. Dep. £1.

Feb. 6.—**Twickenham.**—Improvements.—Forming, levelling, kerbing, channelling, paving, metalling, concreting, and making good Colonial-av., Devoncroft-gdns., Poulett-gdns., Wellesley-rd., for T.C. F. W. Pearce, B.S. Dep. £1 1s.

Feb. 6.—**Twickenham.**—Paving.—Repaving with creosoted-deal blocks of an approximate area of 850 super. yds. of carriageway margins in London-rd., for T.C. F. W. Pearce, B.S. Dep. £1 1s.

Feb. 7.—**Deptford.**—Pumping Machinery.—At the Deptford pumping station, Brookmill-rd., Deptford, London, S.E.8, for M.W.B. Chief Engineer's Department (Room 173), 173, Rosebery-av., E.C.1. Dep. £3 3s.

Feb. 7.—**Devonside.**—Drainage.—Providing and laying about 3,500 yds. of 9-in. and 6-in. diameter fireclay pipe sewers and construction of sewerage purification works, for Clackmannanshire C.C. Carfrae & Morrison, C.E., 4, Hill-st., Edinburgh. Dep. £1.

Feb. 10.—**Looe.**—Making up.—Portion of Hannafore Back-rd., for U.D.C. G. H. Ivory, S.

Feb. 11.—**Great Ouseburn.**—Sewerage.—1,700 lin. yds. of pipe sewers varying in size from 9 in. to 18-in. diameter, together with manholes and other works, in Acomb, for R.D.C. E. J. Silcock, engineer, 25, Victoria-st., Westminster, S.W.1. Dep. £5.

* February 14.—**Barking, Essex.**—Road and Sewer Work.—Formation and kerbing, etc., of roads and the construction of soil sewers and surface water sewers, manholes, ventilators, etc., on the Upney Farm Housing Estate for the Barking Town U.D.C. R. A. Lay, Assoc.M.Inst.C.E., B.S., Public Offices, Barking.

Feb. 14.—**Prestwich.**—Making-up.—Sewering and draining of Chandos-rd., for U.D.C. M. A. Piercy, E. and S. Dep. £1 1s.

Feb. 14.—**Prestwich.**—Sewers.—Roads and sewers on line of Heys-rd. and Heywood-rd., and extension of Deyne Valley sewer, for U.D.C. S. Dep. £3 3s.

Feb. 20.—**Cork.**—Macadam.—Laying about 69,000 super yds. of bituminous macadam on trunk road from Cork to Limerick, between Monard and Rathduff, for C.C. R. F. O'Connor, C.S.

Feb. 20.—**Swindon.**—Extensions.—Construction of approximately 3¼ miles of 16-in. and ¾ mile of 12-in. trunk mains and other incidental works in parishes of Ogbourne St. George, Chiseldon, Wroughton and Swindon, for T.C. J. B. L. Thompson, B.S., 34, Regent-circus. Dep. £3 3s.

Feb. 21.—**New Zealand.**—Deviation.—Construction of Wellington-Tawa flat deviation, Wellington-New Plymouth Railway, for Public Works Dept., Wellington. Commissioner for New Zealand, 415, Strand, London, W.C.2.

Competitions.

(*See Competition News, p.* 168.)

Auction Sales, Tenders, etc.

* January 31.—**Whetstone.**—Charles Sparrow and Son will sell at Torrington Hotel, North Finchley, freehold building land at Whetstone, Middlesex. Auctioneers, 57, High-st., N.12.

Feb. 1, 2 and 3, 6, 7, 8 and 9.—**Canterbury.**—Street and Lewis will offer for sale on the premises, "Hales Place," Canterbury, fixtures and fittings previous to demolition of the Mansion, contents of the chapel and theatre. The outside effects. The fabric of the mansion will be sold for demolition. Auctioneers, 21, North Audley-st., Grosvenor-sq., London, W.1.

*Feb. 7.—**Shrewsbury.**—Joseph Hibbard & Sons will sell without reserve, by order of the liquidator, B. N. Watkins, Esq., A.C.A., re Barker Bros. (Shrewsbury), Ltd., in voluntary liquidation, upon the premises at Smithfield-rd., sawmill plant, office furniture, also freehold premises. Auctioneers, 15, Newington-green, Islington, London, N.16.

At an early date.—**Windsor.**—Knight, Frank & Rutley will sell in blocks or in numerous lots (unless disposed of privately), by direction of the Council of the Imperial Service College Trust, freehold building land on the western fringe of the Royal Borough. Auctioneers, 20, Hanover-sq., London, W.1.

Public Appointments.

Jan. 30.—**London.**—Housing and Town Planning Inspector.—Required by the Ministry of Health. Director of Establishments, Ministry of Health, Whitehall, S.W., on prescribed form.

Jan. 31.—**Ireland.**—Quantity Surveyor in the Ministry of Finance required by the Government of Northern Ireland. Secretary, Civil Service Commission, 15, Donegal-square West, Belfast.

Jan. 31.—**Swansea.**—Assistant Quantity Surveyor required in the Borough Architect's Dept. by the County Borough Council. H. L. Lang-Coath, Town Clerk, Guildhall, Swansea.

*Feb. 7.—**Leicester.**—Clerk of Works required for about eighteen months to supervise the erection of new elementary school buildings, for the Leicester E.C. F. P. Armitage, Director of Education, Town Hall, Leicester.

Feb. 8.—**Leicester.**—Chief Architectural Assistant in the Dept. of the City Engineer and Surveyor required by the City Council. A. T. Gooseman, M.Inst.C.E., City Engineer and Surveyor, Town Hall, Leicester.

Feb. 11.—**London.**—Secretary required for the Royal Sanitary Institute, to take up duty at the end of June next. Chairman to the Council, 90, Buckingham Palace-rd., London, S.W.1.

Feb. 13.—**Southend-on-Sea.**—Principal required at the Municipal School of Arts and Crafts by the Southend-on-Sea Education Committee. John Sargent, Director of Education, Education Office, 20, Warrior-sq., Southend-on-Sea.

——.—**Tanganyika.**—Inspector of Works required by the Government of Tanganyika Territory, for the Public Works Dept. for a tour of 20 to 30 months' service with possible extension. Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/410.

NEWS ITEMS

Diaries and Calendars.

We acknowledge with thanks the receipt of diaries or calendars from the following: E. B. Holmes & Co., Ltd.; Winget (1924), Ltd.; R. K. Burt; A. T. Morse, Sons & Co., Ltd.; Kenneth Craig & Partners; and Frederick Parker, Ltd.

Thames Bridges: Report to City Corporation.

The report of the Bridge House Estates Committee, dealing with the recommendations of the Royal Commission on Cross-River Traffic in London, has been circulated to members of the Court of Common Council. An interesting feature of the document is a map showing the two schemes side by side—St. Paul's Bridge and Ludgate Bridge. The conclusions of the report suggest that the Committee, in asking the Corporation not to construct the ruggested Ludgate Bridge, are still of opinion that there should be a river bridge at St. Paul's. In conclusion the report states:—"The Commission admit the necessity of another bridge within the confines of the City, and we have examined their proposal with every desire to adopt a suitable alternative to that already approved by Parliament, if it will afford real relief to the daily increasing traffic in the City; but we can only regard the 'Ludgate' Bridge as hastily conceived, unsuitable in its route, and impossible to carry out at anything like the cost indicated in the Commission's Report; and we unanimously recommend your Honourable Court not to adopt it. We have given serious consideration to the position which has arisen, and to the need, which is admitted, for relief to the increasing City traffic, and we are unanimously of opinion and recommend that we be authorised further to consider and report on the whole question of cross-river traffic within the City area."

Modern Methods in Building.

The report of the Building Research Board, published by H.M. Stationery Office, gives details of the efforts that have been made to meet the demands of the industry for rapid and more economical methods of building. Dealing with the reason why general research is necessary, the report says:—"The building industry should be regarded as including activities in relation not only to the actual construction or erection of buildings and problems in their design, but to the manufacture and preparation of the materials used. An idea of its magnitude may be gained from the fact that in 1921 roughly 1,000,000 adults were engaged in related occupations, and that the cost of buildings for which plans were approved in 1925 in 148 towns in Great Britain—representing an aggregate population of nearly 16,500,000—is estimated at £66,623,000. There are many specialised sections within the industry; its boundaries are ill-defined; it is far from being a homogeneous unit; its technical difficulties are complex, and their elucidation calls for assistance from many branches of knowledge. The materials used and the methods of construction have, in most cases, been developed and standardised after processes of trial and error extending back through centuries. The industry is, in fact, controlled by tradition, and pays respect mainly to practical experience and craft-skill. Present-day civilisation, with its large industrial population and call for higher and higher standards of living, is making demands on the building industry far beyond those which led to the evolution of these traditional materials and methods. The new problems might be solved to some extent by the old purely empirical processes of trial and error, but such processes are too slow and costly. Only by the application of modern scientific methods can satisfactory solutions be found which will meet the modern demand for rapid erection and durability, combined with economy." The special work that has been carried out includes a series of experiments in connection with the acoustic designs of the Legislation Chamber at Delhi, for a conference hall for the League of Nations at Geneva, and a town hall at Melbourne.

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

Accrington.—T.C. passed plans for 4 bungalows in Haywood-rd., for Chambers & Rawstron.

Ackworth.—Owners of Eagle Brewery, Wakefield, propose to erect an hotel at the junction of the Wakefield-Doncaster-rd., and Pontefract-Barnsley-rd.

Alderley Edge.—Board of Management of Alderley Edge Cottage Hospital, in order to provide accommodation for installation of an X-ray apparatus, decided to make additions to institution. Plans by Messrs. Halliday & Agate, A. & L.R.I.B.A., 14, John Dalton-st.

Amersham.—Committee been formed by R.D.C. to consider housing question.

Ashton-under-Lyne.—J. Bennett, Chinley, acquired a corner site having frontages to William-st. and Manchester-rd., where they propose to erect a petrol-filling station. Plans by Burton Percival & Lever, architects, 150a, Stamford-st.

Aylesbury.—Bucks C.C. are to make application to M.H. for sanction to £52,580 for additional County Offices.

Ballybunion.—Kerry County Board of Health propose to construct a reservoir.

Ballymoney.—Plans for new schools at Drumadoon and Drumnakeel been passed at meeting of North Antrim Regional E.C.

Ballyreney.—Foundation stone of a new Presbyterian Church on site of old one been laid. Building will cost £7,000 and seat 625 persons.

Bangor.—Report on proposed improvement of Harbour, prepared by Harbour and Market Committee, passed by U.D.C.

Barnes.—U.D.C. approved 6 garages in Glenthamrd for A. Quilter.

Barnet.—Sanction been received by U.D.C. from M.H., for erection of 20 non-parlour houses, on Chesterfield estate, and loan of £7,000.

Barnsley.—M.H. sanction borrowing by T.C. of £3,000 for conversion of ground floor of Corn Exchange into shops.

Bathampton.—Bath R.D.C. approved plans for new Wesleyan Chapel, Warminster-rd., at top of Down-lane. Building will seat about 130 persons.

Becontree.—L.C.C. recommend that, subject to consent of M.H., three plots of land in Longbridge-rd. be let to J. G. Tilley for erection of shop premises with living accommodation.

Bedford.—T.C. passed plans for 4 houses, Westfield-rd., H. Young & Son.

Belfast.—Foundation stones of new Cregagh Presbyterian Church, which will cost £8,300, have been laid. Attached to new church will be Allen Memorial hall.—Plans approved by City Surveyor:—23 houses in Meekong-st., for R. O. Templeton: architect, J. MacGeagh; 19 houses in Oval-st., for D. McClean: architect, J. MacGeagh; 20 houses in Oval-st., for R. J. Whitla: architect, J. MacGeagh; 5 houses, Collinview-st., for D. Boyd: architect, J. McAlery; 3 houses, Willowholme-st., for J. McMaster: architect, T. Callender; 3 houses, Tate's-av., for R. Alcock; mission hall, Conlon-st. and Malvern-st., for W. Playfair: architect, J. MacGeagh; 4 villas in Rosapenna-drive, for Smith & Noble.—Governors of Royal Victoria Hospital considered proposal for amalgamation of Maternity Hospital with Royal Victoria Hospital and decides to recommend amalgamation.

Bexley.—U.D.C. passed plans:—34 houses, Boundary-rd., Blackfen, for Wade, Archer & Co., submitted by A. Hargreaves; 10 houses, Church-rd., and 8 houses, Percy-rd., Bexleyheath, for H. Alabaster; addition to old generating station, Bexley, for Dyer, Son & Hilton; 4 houses, Hurst-rd., for James & Norman; 16 houses, Hansol-rd., Bexleyheath, for E. J. Webb.

Birmingham.—Notice been given by Corporation that they intend to sanction erection of certain special buildings (a) school in Dolphin-lane, Acock's Green; (b) school in Hartfield-cres., Acock's Green; and (c) 3 motor houses adjoining the canal off Yardley-rd., Acock's Green.

Bolton.—Members of Tonge Fold Wesleyan Church are raising funds for school extension scheme providing primary department and increasing classrooms with modern kitchen accommodation, estimated to cost £2,500.—A lay-out prepared by B.E. been approved for 108 houses on land off Tonge Moor-rd.—Plans been approved for racing track and stadium, estimated to cost £75,000, at Salford-rd., Hulton.

Brentwood.—Reconstruction and extensions are to be carried out by London Co-operative Society at stores in High-st.

Bristol.—Bristol Co-operative Society, Ltd., are to commence erection of large headquarters and stores in Lawrence-hill. Architect, L. G. Elkins, F.R.I.B.A., 99, Leman-st., E.1.

Buckland Monachorum.—Plans have been passed by Tavistock R.D.C. for house at Quarry-park. Architect, L. F. Vanstone, 15, Old Town-st., Plymouth.

Calne.—The Wiltshire Standing Joint Committee are to erect a police station on site in London-rd.

Canning Town.—Plans being prepared for London Co-operative Society for premises in Rathbone-st.

See also our List of Contracts, Competitions, etc.

Carlisle.—E.C. obtained sanction from B.E. to erect two new central schools, at £80,000.

Chatham.—T.C. passed plans for 6 houses, Pagitt-st., for W. T. Davis and Son.

Chester.—City S. submitted sketch plan showing elevations of houses and shops proposed to be erected on site at junction of Mill-st. and Handbridge.

Cinderford.—Branch office is to be built for Lloyds Bank, Ltd. Plans by C. W. Barnard & Partners, 14, The Promenade, Cheltenham. Builders, Estcoat & Sons, Barton-st., Gloucester.

Coleraine.—Ministry of Home Affairs approved loan of £5,250 by local U.D.C. for 18 houses.

Cork.—Engineer to Harbour Board reported that Anderson's Quay wharf required decking with concrete.

Darlington.—Library Committee recommends new wing to Edward Pease library, at £25,000.

Doncaster.—R.D.C. and Askern P.C. are proposing to erect new secondary school on a site at Sawthorpe.

Dublin.—Loan of £44,000 been sanctioned by Free State Local Government Department for purpose of reconstructing and extending Municipal Abattoir.—R. M. Butler, F.R.I.B.A., 23, Kildare-st., prepared plans in connection with proposed reconstruction of 45, Lower Gardiner-st., for Royal Bank of Ireland, Ltd.—Commercial Public Utility Society decided to erect 43 houses, at £1,000 each, in Griffith-av., between Upper Drumcondra-rd., and Gobsegreen-av.—R. Boyd-Barrett, A.R.I.B.A., 7, Upper Sherrard-st., lodged plans with City Architect for erection of out-patients' department at Teach Ultain, 37, Charlemont-st.

Durham.—E.C. are considering erection of a new school.

Eastry.—R.D.C. approved plans by Pearson & Dorman Long in respect of 22 houses proposed to be erected by them at Betteshanger Colliery.

Enniscorthy.—U.D.C. are to apply for loan to build 20 houses.

Esher.—Council approved plans by J. Lawson for 14 houses fronting Angel-rd., Thames Ditton, on Rythe House land.

Foleshill.—Six houses, Walsgrave-rd., Wyken, been approved by R.D.C.

Friern Barnet.—Surveyor to U.D.C. prepared scheme for erection of stables, etc., at Council's central depot at £604.—Plans approved:—14 houses, Buxted-rd., Auburn & Sons; 6 houses, Friern Watch-av., J. Hutchinson.

Gravesend.—T.C. sanctioned plans for Bridgland and Clay for 6 houses at Ridgeway-av., for W. E. and H. E. Thomas, Ltd.

Great Yarmouth.—At a cost of £17,500, T.C. is to improve North Parade gardens.

Halifax.—Halifax Permanent Benefit Building Society are to erect offices. Architects, Clement Williams & Sons.

Harrow-on-the-Hill.—British Dominion Films, Ltd., purchased large site to build film-producing studios. Plans by H. A. Gold, F.R.I.B.A., 14, Bedford-row, W.C.1.

Hastings.—T.C. approved plans:—8 houses, Berlin.-rd., C. H. L. Greenhill, per F. Bowcock, architect.

Hemsworth.—M.H. considering U.D.C. application for new market.

Hendon.—L.C.C. recommend, subject to consent of M.H., a site at Watling estate be let to Hendon Electric Supply Co., Ltd., for erection of a transformer station.

Hornchurch.—As a memorial to Jack Cornwell, V.C., cottages are to be built.

Huntworth.—A sugar beet factory costing £500,000 is to be built.

Ilford.—London Co-operative Society propose erecting store at 201, Ilford-lane.

Jarrow.—T.C. instructed B.S. to prepare estimate of cost of Shakespeare-st. reconstruction scheme, to include the erection of 90 houses.

London.—L.C.C. decided to offer no observations with regard to the undermentioned proposals:—Surrey—new school at Mitcham for 272 children; Penge—new school at Anerley for about 800 children; Beckenham—new school at Elmer's End for about 1,200 children.

London (Battersea).—B.S. is to carry out repairs at £200 5s. 3d. at 55, Mundella-rd.—Repairs are also to be carried out at Latchmere-rd. baths at £188.—Subject to M.H. and L.C.C. approvals, additional accommodation be provided at "Southlands" tuberculosis dispensary at £217.

London (Bermondsey).—L.C.C. recommend borrowing by B.C. of £3,248 for housing purposes.

London (Bethnal Green).—At cost of £6,096, L.C.C. is to convert Turin-st. school into men's evening institute.

London (Fulham).—B.C. received M.T. approval for scheme for improvements at junction of Wandsworth Bridge-rd. and New King's-rd., by demolition of convenience and re-erection.

London (Greenwich).—L.C.C. recommend borrowing by B.C. of £3,021 for housing purposes.

London (Hackney).—B.C. received reference from Electricity Committee stating that it has become necessary for them to invite tenders for extension of buildings at Balcorne-st. sub-station.—Plans passed:—Woodward & Co., offices and warehouse, 73 and 75, Shacklewell-lane; A. J. King, Ltd., factory premises at rear of 5 and 7, Wellington-rd.; A. Tate, 20 lock-up shops on railway bank, Ridley-rd.

London (Lambeth).—L.C.C. sanctioned £220 for improvement of lavatory accommodation at London School of Printing.

London (Lewisham).—B.C. passed plans:—Middletons (Builders), Ltd., 5 houses and 3 garages, Polsted-rd.; Middletons (Builders), Ltd., 6 houses and 2 garages, Montacute-rd.; A. Frampton, 7 shops, Bromley-rd.; A. J. Glock, 9 houses, Blacklands-rd.—L.C.C. recommend £8,652 in respect of a building grant to governors of Lewisham Prendergast School, towards cost of an additional story and other improvements to school.

London (St. Pancras).—B.C. recommend application to Electricity Commissioners for £18,220 in connection with improvements at Highgate-rd. sub-station.

London (Stepney).—B.C. passed plans:—Hayward & Maynard, building Nos. 133/5, Sidney-st.; B. J. Beisher, building upon southern side of Narrow-st.

London (Wandsworth).—B.C. passed plans:—Hudson Bros. (Builders), Ltd., in addition at rear of Congregational Church, East Hill, Fairfield; F. J. Barrett, 4 houses with garages on site in Valleyfield-rd., Streatham; Ward & Pearce, 8 houses and 4 garages, Broomhill-rd., Southfield; F. H. Hooper, 11 houses, Queensville-rd., abutting on Parkthorne-rd., Clapham South.

London (Westminster).—L.C.C. are to spend over £200 on alterations, etc., at the County Hall.

Londonderry.—Plans been lodged with Corporation for 19 houses, Marlborough-rd., St. Columb's-rd., Limewood-st., and Eden-terr.

Lowestoft.—T.C. recommend that plan of B.S. submitted for erection of shelter accommodation on South Beach between Neptune and Wellington Chalets and for provision of a lock-up shop thereat, at £355, be approved.

Luton.—T.C. passed plans:—4 houses, Maryport-rd., W. J. Ashton; 6 houses, Felix-av., A. Hayward; extensions to works, Davis Gas Stove Co.

Manchester.—Public Health Committee decided on site at corner of Denmark-rd. and Oxford-rd., for tuberculosis offices and dispensary.—J. A. Anderson, Wilmslow-rd., Fallowfield, is proposing to erect shops and showrooms. Plans by Broughton, Atkinson, Eagle & Sons, architects and surveyors, 37, Brown-st.—F. W. Buckenham, Marcer-st., is proposing to erect packing-shed. Plans by T. H. Patching, 14, Mansfield-av., Blackley.—Board of Management of Ancoats Hospital, Mill-st., Ancoats, are proposing to make additions to institution. Plans by Thomas Worthington & Sons, F.R.I.B.A., 178, Oxford-rd.—Trustees of Mission Hall, Hodgelane and Sash-st., Salford, are proposing to erect a permanent building on site. Plans by F. H. Brazier, A.R.I.B.A., architect, 7, Market-st., Altrincham.

Margate.—T.C. passed plans for 16 houses, Waverley-rd., Westbrook, H. Goodban.

Newport (Mon.).—C.B. selected a site on Maindee for public convenience, and B.E. is to prepare plans and make application to M.H. for £1,500.—M.H. forwarded sanction to borrowing of £350 for provision of a public sanitary convenience in Corporation-rd.—Application is to be made to M.H. for sanction to borrow £14,750 for purchase and adaptation of "Stelvio" House and land adjoining for purposes of a public museum, art gallery and/or library.—Council received sanction to borrowing of £2,111 for building and plant in connection with High-st. sub-station.—Plans passed:—17, Wharf-rd., warehouse, J. Thomas, for E. Williams; Windsor-rd., 3, houses, T. Addis & Sons, for H. Budgen; Milton-rd., 4 houses, Phillips, Berry & Smith.

Newry.—J. Fleming, builder, notified Council of his intention to build 37 artisans' houses at Monaghan-st.

Newton Abbot.—U.D.C. approved plan for Newton Abbot Development Co., Ltd., for proposed lay-out of higher portion of Milber site, also for erection of nine pairs of houses thereon.

Northampton.—Greyhound Racing Track Co. propose seeking permission for erection of picturesque bridge across river from approximately the bank adjoining the Fair Ground to meadow on other site.—Proposed to enlarge the county offices at a cost of approximately £20,000. Plans by Talbot Brown & Fisher, FF.R.I.B.A., Burystead-place, Wellingborough.

Omagh.—Technical Instruction Committee received intimation that Regional Education Committee propose erecting technical school.

Padiham.—Funds being raised for rebuilding of Hall Hill Wesleyan Chapel.

Pembroke.—U.D.C. received letter from Free State Department of Local Government and Public Health, intimating sanction of grant of £1,800 for development of three housing sites—at Fairview, Meleady's Field, and Havelock Field.

Plaistow.—London Co-operative Society are to erect premises at 283-287, Barking-rd.

Plymouth.—C.B. are considering site for public abattoir.—Plans are being prepared for new shop fronts and offices at 117 and 118, Tavistock-rd. Architect, L. F. Vanstone, 15, Old Town-st.

Portadown.—Lurgan R.D.C. approved plans:—12 houses, Lenaghery, for T. H. Spence.—U.D.C. approved plans for 18 houses for P. McAneney and 2 shops for P. Flanagan.

Portsmouth.—Adrian J. Sharp, architect to E.C., is to prepare plans for school for 800 scholars on Portsmouth-hill.

Portstewart.—Electricity Commissioners informed U.D.C. of approval of proposal to erect and equip a new generating station for supply of current to town.

PROPOSED NEW BUILDINGS

Preston.—Health Committee instructed B.S. to prepare plans and estimates for extending the administration block at hospital.—Ribble Committee approved plans for new dock offices and authorised Engineer to prepare plans and estimates.—Municipal Buildings Committee approved plan for offices adjoining the Market offices in Birley-st.

Radcliffe.—Town Housing Council are proposing to erect 50 houses.

Ramsgate.—T.C. is making arrangements for developing old Harbour Station site. Proposals include use of old tunnel as a shelter and provision of a bandstand.

Rathmines.—U.D.C. received sanction from Minister of Local Government for £5,000 in connection with the development of Kimmage-rd. housing site.

Raynes Park.—New elementary school for 567 children is to be built.

Redcar.—T.C. adopted a £3,000 scheme for conversion of open pierrot stand into a concert hall to seat 800 people.

Rochdale.—Phœnix Brewery Co., Ltd., Heywood, are proposing to make improvements to Bridge Inn Public House, Oldham-rd. Plans by H. H. Clough, Newgate-chbs.—B.S. prepared plans for lay-out of Nook Farm estate, Whitworth-rd., which is to provide a site for 420 houses.

Rochford.—Plans been prepared for stores for London Co-operative Society at North-st.

Ross.—Funds are being raised by Fr. J. McCarthy and congregation of R.C. Church, Corpus Christi-lane, for new edifice. An architect has not yet been appointed.

Smethwick.—Plans been prepared by T. Randle, Bank-chambers, High-st., for alterations and improvements to the Majestic Picture Theatre in Bearwood-rd., Bearwood.

Southall.—The vicarage is to be demolished to make room for shops.

Southend-on-Sea.—Corporation are building open-air school costing £10,000.—C.B. passed plans:—2 houses and 2 garages, Thorpe Hall-av., G. T. Genever; 6 houses and 6 garages, Kensington-rd., Thorby Bros.; 3 bungalows, Selwyn-rd., H. C. French; 3 lock-up shops and hall at rear, Leigh-rd., R. Walker; 4 houses, Elmsleigh-drive, A. W. Goodhew; 38 houses, Glenhurst-rd., A. Bint & Co.

Staines.—M.H. held inquiry into application by R.D.C. for approval of preliminary statement of proposals for development in connection with town-planning scheme.

Stratford.—London Co-operative Society are to erect stables and greengrocery warehouse at Maryland-st.

Stretford.—U.D.C. passed plans:—52 houses, King's-rd., for J. G. Whitelegg; 6 houses, Sandy-lane, for J. W. Maunders.—U.D.C. resolved that application of B. Monk for permission to proceed with erection of a service station and garages in Chester-rd., Old Trafford, be approved.

Surrey.—C.C. approved plans for new arterial road from Hampton Court to Esher.

Swansea.—Borough Architect submitted plan for additional lairage, etc., at abattoirs, and application is to be made to M.H. for sanction to £1,800 for carrying out work.—Council are proposing to proceed with erection of an asylum.—C.B. resolved that a lease of land having a frontage to Cockett-rd. be granted to S. Davies for shop and house and 10 pairs of semi-detached houses.

Swinefleet.—Vicar of Swinefleet announces intention to build parish hall on site of old building. Plans by F. Turner, architect, Goole.

Tottington.—Committee been formed in connection with provision of a War Memorial for district.

Tullamore.—Fever hospital is to be built on grounds of County hospital.

Upton.—John Smith's Tadcaster Brewery Co. propose to erect an hotel in Wagon-lane.—A licence is being sought by Carter's Knottingley Brewery Co., Ltd., in respect of hotel premises, which they propose to erect upon a site fronting Wagon-lane.

Warminster.—Fund of £18,000 been promoted for local cottage hospital. Plans by Elcock & Sutcliffe, FF.R.I.B.A., 21, Northumberland-av., W.C.2.

Warrington.—Members of Wycliffe Congregational Church have acquired site at Elmwood-av., where it is proposed to erect a new branch church.—Rev. J. Kewley and congregation of Wesleyan Church, Stockton Heath, Warrington, are proposing to make extensions to their Sunday schools.

Watford.—W. Farren & Son, Beechcroft-rd., Rushey, are to build about 50 houses on estimate in Sherwood-rd.

Whickham.—Cottage Hospital governors decided to enlarge institution.

Whitley Bay.—A new five-miles promenade and a bathing pool are to be erected.

Wiltshire.—Standing Joint Committee have decided to erect police houses at Burbage, Castle Combe, Fovant, Brokenborough, and Grafton.

Wood Green.—U.D.C. received M.H. sanction to borrowing £1,365 in respect of works in connection with provision of dwellings for persons of the working-classes, James- and Croxford-gardens.—M.H. stated that Council were now at liberty to obtain tenders for erection of the Combined Welfare Centre on White Hart-lane site.—Plans passed:—Eldon-rd., 7 houses, J. Hamilton & Son, for P. Pryor.

Worthing.—T.C. passed plans:—5 lock-up garages at 42, Sompting-rd., F. M. Tillywhite; 6 houses, Bruce-av., A. M. Lyne per H. M. Potter; 3 houses and shops, Tarring-rd., Sparks Bros. per E. W. Sparks.—Plans and estimates for completion of Secondary school for boys been submitted to governors. Extensions are estimated to cost £10,000.

FIRES.

Lessendrum.—Mansion house of Lessendrum, near Huntly, Aberdeenshire, belonging to Captain J. K. Murray Bisset, been destroyed by fire.

TRADE NEWS

A London Building-Board Convention.

To-day, Friday, is the last day of a convention of some 130 of their distributors and representatives throughout the country which the Merchant Trading Co., Ltd., of 52, Bishopsgate, E.C.2, have been holding at their omces. The convention has been designed to bring together the English, Welsh and Irish distributing houses of the well-known building board, Celotex.

An Essex Timber Firm.

We learn that Mr. L. Hall, timber importer and moulding manufacturer, of Leytonstone, E., has recently acquired the old-established business of Boardman & Co., North-street, Romford, Essex. Under the new management increased stocks of timber, mouldings and doors will be held at Romford, and greater facilities for delivery will be available.

Domestic Boilers.

Messrs. Wm. Pryor & Co., Ltd., Dalston Junction, E. 8, issue several new leaflets drawing attention to their "Norlond" domestic boilers. Advantages claimed for these are that the hot plate is bigger, and that there is no need to open the fire door either to use a poker or to see the fire itself. These leaflets, which contain a number of interesting testimonials as to the boiler's efficiency, will be sent on application.

A Gas-Saving Cooker.

The Gassaver Cooker Co., Ltd., of 34, Victoria-street, S W.1, have placed on the market their new "Gassaver" patent cooker, for which a saving of 50 per cent. on gas is claimed. We learn that using one gas-ring only, the cooker will roast, bake, boil, steam, and fry, all at the same time. All wearing parts are of cast iron, which ensures stability and durability. A booklet giving full description and illustrations of this cooker will be forwarded upon application to the makers.

Portable Macadam Plant.

The new Parker portable tar and bituminous macadam plant of the oil fire type—put on the market by Frederick Parker, Ltd., of Leicester—is of more than usual interest to all contractors and municipal and county engineers. We hear that the lay-out of the plant as a compact transportable unit is a good example of economy of space and weight, combined with ample strength and a high degree of working efficiency. Full details may be obtained from the manufacturers.

British Industries Fair, Birmingham, 1928.

We learn that Messrs. Wadkin & Co., of Leicester, are showing a number of wood-working machines at this Fair. They consist of the following:—Semi-auto wood miller, model WH; 20 in. by 9 in. combined surfacing and thicknessing machine, model MK; 6 in. surfacing machine, model RAD; combined chain and chisel mortising machine, model ME; boring and recessing machine, model LP; cross-cutting and trenching machine, model CC; automatic cross-cutting and trenching machine, model CE; single dimension saw, model PK; belt sanding machine, model GMA; spindle moulding machine, model EV; and 36-in. roller-feed saw bench (under-driven), model PT. The feature of these exhibits is that practically the whole of the machines are direct motor driven, and will be on view giving practical demonstrations from time to time.

"Broad Flange Beams."

Messrs. R. A. Skelton & Co., Steel and Engineering, Ltd., have published under this heading a handbook (No. 21) in which the uses and properties of these beams (grey process) are fully specified. The book is full of formulæ of the very greatest use to architects, engineers and contractors, and indexed exactly and handily. A useful section, for the benefit of London users, is that devoted to special tables of safe loads, calculated in accordance with the L.C.C. (General Purposes) Act, 1909. The handbook may be obtained (price 5s.) from the company at Moorgate Station-chambers, E.C.2.

A CELEBRATION DINNER

A DINNER was held last Friday at Frascati's to celebrate the 70th birthday of the governing director of Messrs. F. & H. F. Higgs, Ltd., Mr. Frederick Higgs, F.I.O.B. The chair was taken by Mr. Basil C. Aldous, A.I.O.B. Amongst the guests present were Mr. H. H. Romaine Walker, F.R.I.B.A., Mr. Stanley Hamp, F.R.I.B.A., Mr. Leonard Martin, F.R.I.B.A., Mr. H. F. Murrell, F.R.I.B.A., Mr. H. W. Burrows, F.R.I.B.A., and others. An excellent musical programme was provided during the evening.

After the customary loyal toasts had been honoured Major R. J. Halliday, M.C., F.I.O.B., proposed the toast of the evening. Mr. Frederick Higgs, he regretted to say, was not enjoying such good health as they desired, but they hoped that he might be spared for many years. Mr. Higgs had taken during his life a great interest in the building industry and had held many offices, and despite his advancing years, was still looked upon as one of its corner stones by the National Federation. The speaker then gave some amusing and interesting details of his apprenticeship days with Mr. Higgs. Proceeding in a jocular manner, he said that he viewed with alarm the incursion of lady architects into architecture, and wondered if it would be necessary to devise some special form of scaffolding for their convenience when inspecting works, also whether their presence would bring about a complete stoppage of work by inquisitive men.

Mr. H. F. Webb, the secretary, who has been with the firm for over 20 years, at this juncture, on behalf of the staff, presented Mr. Higgs with a practical testimony of their appreciation in the form of a wireless cabinet, and an illuminated address, signed by the members of the staff, as a sincere expression of their good will and regard for and towards him. They wished him a speedy recovery, so that he might enjoy the work and occupation in which for so many years he had been actively engaged, and that the staff might have the pleasure of his company and the encouraging stimulus of his example in their work.

In responding, Mr. Higgs thanked his staff, comrades and old pupils, in which Major Halliday figured largely, for their testimony of appreciation, which he would highly value. He gave an interesting account of the history of the firm and of his long connection with Major Halliday. He had had prepared a little token of remembrance, in the form of silver cigarette cases suitably engraved, for various members, which were presented to them on his behalf by Mr. Webb. Mr. Higgs also said he looked forward to the time when the rank and file, as well as the heads of departments, might have some share in the profits of the firms. He had given the matter much thought, and yet hoped to devise some scheme to this end.

The toast of "The Guests" was proposed by Mr. Basil Aldous, A.I.O.B., and responded to in an amusing speech by Mr. J. M. Theobald, F.S.I.

"The Staff" was proposed by Mr. George J. Aldous, M.C., A.I.O.B., and ably responded to by Mr. D. Middlemass. "Auld Lang Syne" brought to a close a pleasant evening, in which the utmost good feeling prevailed.

Federated Builders' Year Book.

We acknowledge with thanks a copy of this Year Book and Diary, which is published by the Southern Counties Federation of Building Trades Employers, at 34, Russell-square, W.C.1. It contains full Federation news besides ample diary space, while a mine of useful building data is also included.

We have received calendars from Captain Ben Hurst—of the Army Vocational Training Centre, Aldershot—and Messrs. Pinchin, Johnson & Co., Ltd., for which we desire to express our thanks.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.

Best Stocks 4 5 6
Second Hard Stocks 3 19 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at King's Cross	2 14 3	Best Blue Pressed Staffs	9 5 0
Do., grooved for Plaster	2 16 3	Do. Bullnose ..	9 15 0
Do., Bullnose ..	3 8 3	Blue Wire Cuts	7 5 0
Best Stourbridge Fire Brick :—			
2½ in.	8 11 0	3 in.	10 3 0
GLAZED BRICKS—			
Best White Ivory, and Salt Glazed Stretchers ..	21 0 0	D'ble Str'tch'rs	29 10 0
Headers	20 10 0	D'ble Headers	26 10 0
Quoins, Bullnose and 4½in. Flats	27 10 0	One Side and two Ends ..	30 10 0
		Two Sides and one End	31 10 0
		Splays and Squints	28 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.
Delivered London.

	s. d.		s. d.
2 in. per yd. super.	1 11	3 in. per yd. super.	2 9
2½ in. „ „	2 4	4 in. „ „	3 6

	s. d.	
Thames Ballast	10 6 per yd.	delivered 2 miles radius Paddington
Pit Sand	13 9 „ „	
Thames Sand	14 6 „ „	
Best Washed Sand	14 6 „ „	
¾ in. Shingle for Ferro-Concrete	12 9 „ „	
¼ in.	14 0 „ „	
¾ in. Broken Brick	11 6 „ „	
Pan Breeze	8 0 „ „	

Per ton delivered in London area in full van loads.

Best Portland Cement. British.
Standard Specification. Test £2 13 0 to £2 15 0 46s. alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	0 10 0
Super Cement (Waterproof)	4 3 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
„ „ Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
„ „ White	3 12 6
„ Fine	5 12 0
Sirapite, Coarse	3 9 0
„ Finish	3 17 0
Grey Stone Lime	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime	1 17 6
Hair ..... per cwt.	2 2 6
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.
Stourbridge Fireclay in s'cks 37s. 0d. per ton at rly. dp.

STONE.

BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube ..... s. d. 2 10

BEER STONE—RANDOM BLOCK—
Free on rail at Seaton Station, per ft. cube 2 3
Delivered free on rail Nine Elms, S.R. per ft. cube 3 1½
Selected approximate size one way, 1d. per cubic foot extra; selected approximately three sizes or for special work, 3d. per cubic foot extra.

PORTLAND STONE.—
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S.Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube 4 4½
Do. do. delivered on road wagons at above stations, per ft. cube 4 5½
White basebed, 3d. per ft. cube extra.
NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

HOPTON-WOOD STONE—
Delivered at any Goods Station, London. s. d.
Random blocks, from 10 ft. and over P. ft. cb. 17 0
Sawn two sides ..... „ 27 0
Sawn three or four sides ..... „ 32 0

YORK STONE, BLUE—*Robin Hood Quality.*
Delivered at any Goods Station, London.
6 in. sawn two sides landings to sizes (under 30 ft. super) ..... Per ft. super 5 6
6 in. rubbed two sides, ditto .... „ 6 0
3 in. sawn two sides slabs (random sizes) „ 2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... „ 1 6½
1½ in. to 2 in. ditto, ditto ..... „ 1 3½

HARD YORK—
Delivered at any Goods Station, London.
Scappled random blocks ..... Per ft. cube 6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) ..... Per ft. super 5 1½
6 in. rubbed two sides, ditto .... „ 6 1½
4 in. sawn two sides slabs (random sizes) „ 2 1½
3 in. ditto ditto „ 2 10
2 in. self-faced random flags .. Per yd. super. 8 8

CAST STONE.

Delivered in London area in full-van loads, per ft. cube:—Plain, 8s. 6d.; Moulded, 9s. 6d.; Cills, 10s. 0d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£30 0	3 × 6	£21 0
4 × 9	26 0	3 × 11	25 0
4 × 8	25 0	2 × 11	26 0
4 × 7	23 0	3 × 9	24 0
3 × 8	22 0	2½ × 9	24 0
3 × 7	22 0	3 × 4½	21 0
2½ × 7	21 0	3 × 4	21 0

PLANED BOARDS.

1 × 11	£30 0	1 × 9	£28 0

PLAIN EDGE FLOORING.

Inches	per sq.	Inches.	per sq.
⅝	18/-	1¼	30/-
⅞	21/-	1½	34/-
1	24/-		

TONGUED AND GROOVED FLOORING

Inches.	per sq.		
1	24/-	⅝	16/6
1¼	30/-	¾	19/-
1½	34/-	1	24/-

MATCHING (BEST).

Ins. BATTENS.	s. d.	SAWN LATHS.	s. d.
¾ × 2 ....per 100 ft.	2 6	Per bundle	2 6

1" AND UP THICK.

	£ s. d.	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 16 0 to	0 18 0
Dry American and/or Japanese Figured Oak, ft. cube	0 14 0 to	0 15 0
Dry American and/or Japanese Plain Oak, ft. cube	0 10 0 to	0 13 0
Dry sq. edged Honduras Mahogany, ft. cube	0 15 0 to	0 18 0
Dry Log cut Honduras Mahogany, ft. cube	0 16 0 to	1 1 0
Dry Cuba Mahogany, ft. cube	1 1 0 to	1 10 0
Dry Teak, ft. cube	0 13 0 to	0 15 0
Dry American Whitewood, ft. cube	0 10 0 to	0 14 0
Best Scotch glue, per cwt.	4 10 0 to	—
Liquid Glue, per cwt.	4 7 0 to	5 10 0

SLATES

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000.

	£ s. d.		£ s. d.
24 by 12	32 18 4	18 by 10	18 12 11
22 by 12	29 17 11	18 by 9	16 9 2
22 by 11	27 14 2	16 by 10	15 12 6
20 by 12	26 5 0	16 by 8	12 3 9
20 by 10	22 10 0		

TILES.

Delivered at London rate stations in full truckloads of not less than 6 tons. Per 1,000 f.o.r. London.

Best machine-made tiles from Broseley or Staffordshire district	5 7 6
ditto hand-made ditto	5 17 6
Ornamental ditto	6 2 6
Hip and valley tiles (per dozen) Hand-made	0 9 6
Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

	£ s. d.
R.S. Joists, cut and fitted	12 10 0
Plain Compound Girders	14 10 0
„ „ Stanchions	16 10 0
In Roof Work	19 10 0

MILD STEEL ROUNDS.—To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
½ in.	12 0 0	⅝ in. to ½ in.	10 15 0
⅜ in.	11 0 0	⅝ in. to 2¾ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Tubes. Wrought Mild Steel.	Tubes. Genuine Staffs. Iron.	Fittings. ½ in. and under.	Fittings. Over ½ in.	Flanges. ½ in. and under.	Flanges. Over ½ in.
	%	%	%	%	%	%
Gas	67½	50	42½	45	52½	55
Water ..	63½	46½	37½	40	47½	50
Steam ..	60	42½	32½	35	42½	45
Galv. gas ..	55	37½	32½	35	42½	45
Galv. water	50	32½	27½	30	37½	40
Galv. steam	45	27½	22½	25	32½	35

C.I.—HALF-ROUND GUTTERS—London Prices ex Works

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/3½	11½d.	3½d.
3½ in.	1/4½	1/1½	3½d.
4 in.	1/6	1/3	3½d.
4½ in.	1/7½	1/4½	4½d.
5 in.	1/10½	1/6½	5½d.
O.G. GUTTERS.			
3 in.	1/8	1/4½	3½d.
3½ in.	1/8	1/4½	3½d.
4 in.	1/9½	1/4½	3½d.
4½ in.	1/11½	1/7½	4½d.
5 in.	2/4½	1/10½	5½d.

RAIN-WATER PIPES, &c.

per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/10½	1/3	1/9½
2½ in. „	2/0½	1/4½	2/1½
3 in. „	2/6	1/9	2/7½
3½ in. „	2/11½	2/0½	3/0½
4 in. „	3/5	2/6½	3/8½

L.C.C. COATED SOIL PIPES—London Prices ex Works

	Pipe.	Bends. stock angles.	Branches. stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts. plain	3 3	2 4½	2 10
2½ in. „	3 9	2 7½	3 7
3 in. „	4 6	2 10	4 2½
3½ in. „	4 11½	3 7	4 11½
4 in. „	5 5½	4 0½	5 9

L.C.C. COATED DRAIN PIPES—London Prices ex Works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 4	5 1	8 0½
4 in. „ „	6 2	5 8	10 0
5 in. „ „	7 2	10 10	17 1
6 in. „ „	8 6	13 2	21 9

Gasken for jointing, 38/6 per cwt.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common bars	13 0 0	to	14 10 0
Staffordshire Crown Bars— Good merchant quality ..	14 5 0	to	15 15 0
Staffordshire Marked Bars	16 5 0	..	17 5 0
Mild Steel Bars	10 0 0	..	11 0 0
Steel Bars. Ferro-Concrete quality, basis price	10 0 0	..	11 0 0
Hoop iron, basis price ..	12 0 0	..	13 0 0
„ Galvanised ..	27 0 0	..	28 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g.	13 5 0	..	14 5 0
„ „ „ 24 g.	14 5 0	..	15 5 0
„ „ „ 26 g.	16 5 0	..	17 5 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 21 g.	15 10 0	..	16 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	16 10 0	..	17 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g. ..	18 10 0	..	20 10 0
No. 1 quality £4 per ton extra.			
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18 0 0	..	19 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	18 10 0	..	19 10 0
Ordinary sizes 6 ft. to 9 ft. to 26 g.	21 10 0	..	22 10 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22 0 0	..	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 0 0	..	26 0 0
Best Soft Steel Sheets, 26 g.	25 10 0	..	26 10 0
Cut Nails, 3 in. to 6 in. ..	19 0 0		

(Under 3 in. usual trade extras.)

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.) £ s. d.

LEAD—Sheet, English, 4 lb. and up 30 10 0
Pipe in coils 31 0 0
Soil pipe 34 0 0
Compo Pipe 32 10 0

NOTE.—Countrydelivery, 20s. per ton extra; lots under 3 cwt. 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes. 5s. cwt. extra.

Oil lead, ex London area, at Mills ..... per ton 21 5 0

COPPER.

		s. d.
Seamless Copper tubes (basis)	per lb.	1 0¼
Strong sheet	„	1 0
Thin	„	1 1
Copper nails	„	2 3
Copper wire	„	2 4

PLUMBERS' BRASS WORK.
Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.
½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
29/- 45/- 76/- 153/- 246/- 510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.
½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
41/6 62/- 92/- 174/- 300/- 588/- per doz.

RIVER PATTERN SCREW DOWN MAIN FERRULES.
½ in. ¾ in. 1 in.
39/6 60/- 116/6 per doz

CAPS AND SCREWS.
1¼ in. 1½ in 2 in. 3 in. 3½ in. 4 in.
7/6 10/- 14/- 23/- 30/- 42/- per doz.

DOUBLE NUT BOILER SCREWS.
½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
7/6 11/- 17/- 29/- 36/- 63/- per doz.

BRASS SLEEVES.
1¼ in. 2 in. 3 in. 3½ in. 4 in.
10/- 12/- 20/- 24/- 31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.F.
½ in. ¾ in. 1 in. 1¼ in. 1½ in.
35/- 56/- 98/- 162/- 228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.
1¼ in. 1½ in. 2 in. 3 in.
8 lbs. P. traps .. 33/- 41/- 56/- 101/- per doz.
8 lbs. S. traps .. 35/- 45/- 66/- 126/- „

TIN.—English Ingots, 3/1 per lb. SOLDER.—Plumber's 1/3, Tinmen's 1/6, Blowpipe 1/7 per lb.

PAINTS, &c.

			s. d.
Raw Linseed Oil,	in pipes	per gallon	0 2 11
„ „ „	in barrels * ..	„	0 3 1
„ „ „	in drums	„	0 3 3
Boiled „	„ in barrels ..	„	0 3 3
„ „	in drums	„	0 3 6
Turpentine	in barrels	„	0 3 10
„	in drums (10 galls).	„	0 4 0
Genuine Ground English White Lead, per ton			47 5 0

(In not less than 5 cwt. casks.)

(*Continued on p. 198.*)

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

PAINTS, &c. (*contd.*)

		£	s.	d.
GENUINE WHITE LEAD PAINT—"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J." Brand, and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	66	15	0
Red Lead, Dry (packages extra) ..	per ton	38	10	0
Best Linseed Oil Putty	per cwt.	0	15	0
Fillicol	"	0	15	6
Size. XD quality	7kn.	0	3	6

GLASS

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft.
15 oz. fourths ..	2½d.	32 oz. fourths	6½d.
15 " thirds ..	3½d.	32 " thirds	9½d.
21 " fourths ..	4d.	Obscured Sheet, 15 oz.	3½d.
21 " thirds	4½d.	" " 21 "	4½d.
26 " fourths ..	4½d.	Fluted 15oz.6½d., 21oz.	9d.
26 " thirds	6½d.	En'lled 15 oz.4½d.,21oz.6½d.	

Extra price according to size and substance for squares cut from stock

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per ft.
Rolled plate	4½d.
Rough rolled	5½d.
Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	8½d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted do.	6½d.

Cast plate is same price as rough rolled.

VARNISHES, &c.

		Per Gallon. £	s.	d.
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Copal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	6
Fine Copal Flatting	ditto	1	0	6
Hard Drying Oak	ditto	0	18	0
Fine Hard Drying Oak	ditto	0	19	0
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	2	0
Best ditto	ditto	1	12	0
Best Japan Gold Size		0	12	6
Best Black Japan		0	10	6
Oak and Mahogany Stain (water)		0	12	0
Brunswick Black		0	7	6
Berlin Black		0	14	6
Knotting (patent)		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebine		0	9	0
Cuirass Black Enamel		0	7	0

THE SCOTTISH BUILDER

HOUSING PROGRESS IN SCOTLAND

The following figures show the progress that has been made in State-aided housing schemes in Scotland to December 31, 1927 :—

	Completed.	Under Construction.
1919 Act	25,550	—
Private subsidy schemes (1919 Additional Powers Act)	2,324	—
Slum clearance schemes ...	6,422	2,985
1923 Act :—		
By local authorities ...	3,912	86
By private enterprise ...	11,655	2,574
1924 Act :—		
By local authorities ...	17,437	11,788
By private enterprise ...	421	114
Demonstration houses ...	17	—
Steel houses erected on behalf of Government by Scottish National Housing Company	2,228	314
	69,966	17,861

NEW BUILDINGS IN SCOTLAND

Banff.—RENOVATION.—Rev. D. Findlay Clark, of the Parish Church, has intimated that authority has now been given to proceed with the scheme to renovate the church, which is estimated to cost £8,500.

Dunbar.—BUILDINGS.—The Dunbar Town Council have decided to proceed with the erection of the new municipal buildings at a cost of £3,300.

Saltcoats.—HOUSES.—The Scottish Board of Health has approved the building scheme of the town council for the erection of 56 flatted houses of three apartments in the public park

Edinburgh.—HOSPITAL.—A deputation in connection with the scheme for a new Edinburgh hospital for crippled children has been received by the sub-committee of the Lord Provost's Committee of Edinburgh Town Council.

Edinburgh.—CREMATORIUM.—A public meeting, under the chairmanship of Lord Salvesen, in connection with the proposed erection of a crematorium.

Hawick.—BUILDING.—The Hawick Town Council has agreed to purchase from the Duke of Buccleuch four acres of land at Greenheads, and to use the ground when necessary for building purposes. The Council also agreed to purchase a piece of ground at Thorterdykes, close to the present building scheme.

Edinburgh.—BUILDINGS.—The Edinburgh Dean of Guild Court granted warrants as follows :—City—tenement of two shops and six houses at corner of Vennel and Grassmarket; Mr. J. Miller—nine double bungalows at Blinkbonny; Mr. J. S. Sinclair and another—four flatted villas at corner of Derby-street and Park-road, Leith.

Falkirk.—RECONSTRUCTION.—The Falkirk Dean of Guild Court has granted the following :—Messrs. Walker, Hunter & Co., Ltd., Portdownie Ironworks, Camelon, to alter their present ironworks at Portdownie. The estimated cost of the proposed reconstruction is £30,000.

Leslie.—HOUSES.—Tenders for 40 houses, which are to be erected on the site at Maryfield for the Town Council, are now being invited. Plans have been prepared by Messrs. Walker & Pride, architects, Church-square, St. Andrews.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rate of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers—Masons', Bricklayers' Plasterers'.
Aberdeen	1/8	1/8½	1/8	1/8	1/8	1/8	1/7	10½d. to 1/1
Airdrie	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3
Alexandria	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2½ to 1/3½
Arbroath	1/7	1/7	1/7	1/7½	1/7	1/7	1/5½	1/1½
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3
Bathgate	1/8	1/8	1/8	1/8½	1/8	1/8	1/6½	1/2 to 1/3
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-
Bo'ness	1/8	1/9	1/8	1/8	1/8	1/8	1/8	1/3
Coatbridge	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3½
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dumfries	1/7	1/7	1/7	1/7	1/7	1/8	1/7	1/3½
Dundee	1/8	1/8	1/8	1/8	1/8	1/7	1/7	1/2½
Dunfermline	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Edinburgh	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Falkirk	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Fort William	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Galashiels	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Glasgow	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Greenock	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hamilton	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/0½ to 1/3½
Hawick	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Helensburgh	1/7	1/7	1/8	1/9	1/8	1/7	1/7	1/3½
Inverness	1/8	1/8	1/7	1/7-1/7½	1/7	1/7	1/7	1/2½
Kilmarnock	1/6	1/6	1/8	1/9	1/8	1/8	1/7	1/3½
Kirkcaldy	1/8	1/8	1/6	1/6	1/6	1/6	1/6	1/- to 1/2
Kirkwall	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Lanark	1/5	1/5	1/4	1/5	1/5	1/8	1/8	1/3½
Leith	1/8	1/8	1/8	1/9	1/8	1/4	1/4	1/-
Motherwell	1/8	1/8	1/8	1/8	1/8	1/8	1/6	1/- to 1/2
Perth	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Stirling	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Stirlingshire (Eastern District)	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3
Wishaw	1/8-1/10	1/8-1/10	1/8	1/9	1/7	1/8	1/6½	1/3½
	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 191.

PAINT MANUFACTURERS' BANQUET

ON Friday last, the associated houses of Messrs. Robt. Ingham Clark & Co., Ltd., and R. Gay & Co., Ltd., held their annual convention banquet at the Trocadero Restaurant, W., at which over eighty guests—for the most part the principals of the firms' distributing houses who had, earlier in the day, attended their convention at Stratford—sat down to dinner. The loyal toast being honoured, Mr. R. Fell Clark, who was in the chair—vice Mr. Robert Ingham Clark, unfortunately unable to be present—proposed the toast of "Our Guests." He said that this year's convention had been more successful than ever previously, mainly because the principals of the distributing houses had been present instead of representatives. He felt that these conventions had been a great help, not only to the firms who attended, but to the trade as a whole.

Mr. W. T. Clegg—of Messrs. Kennedy's, of Bournemouth—said in reply that it was a very pleasant task to convey the guests' thanks for the very interesting day they had spent and the splendid way in which they had been entertained that evening. He then spoke of the real meaning of service, as looked at from the distributors' point, which was that service did not end with purchase. The true salesman took interest in the article after it was sold—even though there was no chance of a repeat order.

At this point the chairman presented various prizes won during the year, the first prize of the championship cup for window-dressing going to Messrs. Thompson, of Portsmouth.

Mr. John Olby then proposed the toast of the "Associated Houses," who, he said, owed a great deal to Messrs. Ingham Clark. To this toast Major R. H. ("Bobby") Ingham Clark and Mr. F. Evans replied in a vein which, if not strictly relevant to the subject, was most amusing and greatly appreciated. During dinner, a programme of music contributed by a number of artistes, who included Messrs. W. Aston, H. Baker, and F. W. Jeffers, of the firms' staff, was given and very greatly appreciated.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	0
Add if in clay	,, ,,	1	0
Add for every additional depth of 6 ft.	,, ,,	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	,, ,,	1	0

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	38	0
Add if in underpinning in short lengths	,, ,,	7	0
Add if in floors 6 in. thick	,, ,,	3	3
Add if in beams	,, ,,	3	9
Add if aggregate 1 : 2 : 4	,, ,,	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	,, ,,	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	32	0	0
Add if in stocks	,,	7	10	0
Add if in Staffordshire blues	,,	22	0	0
Add if in Portland cement and sand	,,	1	10	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	,, ,,	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	,, ,,	0	0	10
Axed in stocks	,, ,,	0	1	9
Rubbed and gauged jointed in putty camber or segmental	,, ,,	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	,, ,,	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	,,	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	,, ,,	9	6
Three-quarter-inch on flats in two thicknesses	,, ,,	6	3
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	,, ,,	1	2

MASON.

York stone templates fixed	per foot cube	13	0
York stone sills fixed	,, ,,	22	0
Bath stone and all labour fixed	,, ,,	10	6
Beer stone and all labour fixed	,, ,,	15	0
Portland stone fixed	,, ,,	20	0

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	,,	80	9
Do. 24 in. × 12 in. Do. Do.	,,	90	0

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	5	0	
Do. joists	,, ,,	5	6	
Do. roofs, floors and partitions	,, ,,	6	0	
Do. trusses	,, ,,	8	6	
Deal rough close boarding (¾″ 35/6; 1″ 40/-; 1¼″ 45/-; 2″ 72/-)	per sq.			
Flat centering for concrete floor, including struts or hangers	,,	50	0	
Do. to beams	per ft. sup.	1	0	
Centre for arches	,,	1	6	
Gutter boards and bearers	,,	1	0	

FLOORING.

	¾″	1″	1¼″	1½″
Deal-edges shot (per sq.)	—	44/6	53/-	60/6
Do. tongued and grooved	—	49/-	57/6	65/-
Do. matchings	45/-	51/-	—	—
Moulded skirting, including backings and grounds (per ft. sup.)	1/6	1/9	2/-	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	,, ,,	2	1
Add for fitting and fixing	,, ,,	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights; average size	,, ,,	3	9

DOORS.

		1¼″	1¾″	2″
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	,,	2/5	2/8	2/11
Two-panel moulded both sides	,,	2/8	2/11	3/2
Four-panel Do. Do.	,,	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	,,	1/4	1/6	1/9
Add if cross-tongued	,,	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail : average, 3 in. × 3 in.	,, ,,	6	0
Add if ramped	,, ,,	12	0
Add if wreathed	,, ,,	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and	
Casement stays	1/2	making good	19/-
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	,,	19	0
Do. stanchions	,,	21	9
In roof work	,,	27	6

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints	ft. run	1/6	1/9	2/-	2/6
Ogee Do. Do.	,,	1/9	2/-	2/6	3/3
Rain-water pipes with ears	,,	1/9	2/7	—	—
Extra for shoes and bends	each	4/4	5/11	—	—
Do. stopped ends	,,	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	,,	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	43	0
Do. Do. in flats	,,	42	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run	0	6
Soldered seam	,, ,,	1	3
Copper nailing	,, ,,	0	4

		½″	¾″	1″	1½″	2″	4″
Drawn lead waste	per ft. run	1/2	1/9	2/-	3/4	4/-	—
Do. service	,,	1/8	2/2	2/7	3/10	—	—
Do. soil	,,	—	—	—	—	—	6/9
Bends in lead pipe	each	—	—	—	—	3/3	8/2
Soldered stop ends	,,	1/2	1/8	2/1	2/10	3/6	—
Red lead joints	,,	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	,,	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	,,	—	—	—	14/7	19/6	—
Bib cocks and joints	,,	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints	,,	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard. sup.	2	6
Do. Do. Sirapite	,, ,,	2	9
Do. Do. Keen's	,, ,,	4	0
Add saw lathing	,, ,,	1	7
Add metal lathing	,, ,,	2	6
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	,, ,,	2	2
Do. plain face	,, ,,	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	9

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	8½
26-oz. Do.	,, ,,	1	0
Obscured sheet	,, ,,	1	1
⅛-in. rolled plate	,, ,,	0	9
¼-in. rough rolled or cast plate	,, ,,	0	10½
½-in. wired cast plate	,, ,,	1	4

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	,, ,,	0	7
Plain painting, 1 coat	,, ,,	0	9
Do. 2 coats	,, ,,	1	2
Do. 3 coats	,, ,,	1	9
Do. 4 coats	,, ,,	2	4
Graining	,, ,,	2	3
Varnishing twice	,, ,,	1	9
Sizing	,, ,,	0	3
Flatting	,, ,,	0	7
Enamel	,, ,,	1	1
Wax polishing	per foot sup.	0	6
French polishing	,, ,,	1	2
Preparing for and hanging paper	per piece, 2/- to 4/-		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployments Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him next week not later than Tuesday evening.

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*

Ashbourne.—Buildings for high-class pumping station at Rodsley, for the U.D.C. Dr. H. Lapworth, consulting engineer, 25, Victoria-street, S.W.1:—
*S. Birch & Sons, Ashbourne.

Ballybunion.—Waterworks for the Kerry Health Board:—
*D. Clarke, Dublin £5,454 0 6

Barnet.—20 houses on the Chesterfield estate, for the U.D.C.:—
*Pellengell & Clark £6,920

Blackpool.—Bakehouse and garage at Red Bank-road, Bispham, for Messrs. Williams Deacon's Bank, Ltd., of Manchester. Messrs. Lumb & Walton, FF.R.I.B.A., architects, 19, Clifton-street, Blackpool:—
*John Heap & Sons, Ltd., St. Annes-on-Sea.

Bradford.—Extensions to Albion Mills, Dudley Hill. Mr. Wm. Illingworth, architect:—
Joiners—
*Gamble & Shapcott.
Mason—
*A. Hoyle.
Asphalter—
*Tunstalls Asphalte Co., Ltd.

Brechin.—Additions and alterations to the High school, for the Forfarshire E.C. Mr. J. Mcgregor, architect. Quantities by Mr. T. Whyte, 10, Tay-square, Dundee:—
Mason work—
*A. G. Rennie, Brechin.
Steel and iron work—
*D. Keay & Leslie, Dundee.
Smith work—
*Wm. Gratrix & Sons, Walkden.
Joiner work—
*Wm. Black & Son, Ltd., Brechin.
Ironmonger work—
*D. Dickie & Sons, Dundee.
Glazier work—
*Lindsay & Scott, Dundee.
Slater and roughcast work—
*David Scott, Brechin.
Asphalt work—
*Wm. Briggs & Sons, Ltd., Dundee.
Plumber work—
*Jas. Davidson, Brechin.
Electric light work—
*Fraser & Borthwick, Ltd., Glasgow.
Plaster, Cement, etc., work—
*C. Thomson & Sons, Brechin.
Tile work—
*Barclay, Mackay & Co., Ltd., Glasgow.
Paving work—
*David Callander, Forfar.
Heating—
*Robert Stewart, Broughty Ferry.

Carmarthen.—Additions to the Carway Council school, for the Carmarthenshire C.C. Mr. W. V. Morgan, County Architect:—

W. Phillips, Kidwelly	£2,472
B. Howell & Son, Ltd., Llanelly	2,439
G. Mercer & Sons, Ltd., Llanelly	2,350
Esmond & Davies, Llanelly	2,130
T. Hughes, Llanelly	1,998
C. Thomas & Co., Llandilo	1,987
J. Evans, Burry Port	1,947
E. E. Richards, Pontyates	1,900
W. Bonnell, Burry Port	1,665
†Williams & Griffiths, Trimsaran	1,660

Cheltenham.—Branch offices for the Royal Insurance Co., Ltd., Lombard-street, E.C.3. Messrs. L. W. Barnard & Partners, architects, 14, Promenade:—
*Morris & Son, Cheltenham.

Chertsey.—50 houses on the Pyrcroft-road site, for the U.D.C.:—
*Enticknap Bros., Godalming £18,435

Chester.—162 houses on the Eaton-road estate, for the T.C.:—
*C. J. Doyle, Liverpool £56,148

Chester.—Supplying and fixing 3 kiosks in the Groves, for the T.C.:—
*T. G. Huxley & Co., Hoole £369

Coleraine.—New harbour office, laying of foundations of new weighbridge, and making a new road, for the Harbour Board:—
*W. Currie, Coleraine £787

Conway.—Motor shed and stores, for the R.D.C.:—
*R. Owen, Glan, Conway £250 15 6

Dublin.—Structural alterations at 59, South Great George's-street, for the C.B.:—
*O'Rafferty & McGahan, Dublin £376

Dublin.—Supply, erection and painting of 700 lineal yards of two-bar wrought iron railings, with the necessary standards, bolts, etc., on a concrete base to surround the grass margins on the sides of Lower Drumcondra-road, for C.B.:—
*Crown Alley Iron Works £271 16 8

Farnham.—Re-roofing the cottages at Heathyfield, for U.D.C.:—
*Punter & Le Clercq £470 13 4

Hull.—Alterations and additions to the offices, etc., at Tram Depot, Cottingham-road, for the Tramways Committee. Mr. D. Harvey, A.R.I.B.A., City Architect. Quantities by Mr. H. Ashley Cooper, Southam-chambers, Waltham-street:—
*Markwell Holmes & Hayter, Ltd., Hull £2,230

Ireland.—The following contracts have been placed by the Commissioners of Public Works during the month of November:—
Custom House, Dublin (roofing, flooring and joinery works):
A. P. Watkinson, Dublin.
Drim National School, Co. Galway (enlarging of school):
J. Canning, Galway.
Phœnix Park National School (enlarging of school):
A. P. Watkinson, Dublin.
Stepaside Garda Siochana Station, Co. Sligo (reconstruction):
J. Rooney, Balbriggan.
Culleen National School, Co. Mayo (alterations and improvements):
M. J. Dunleavy Bros., Charlestown.
Skreen Garda Siochana Station, Co. Sligo (erection of station):
M. Kilcawley, Enniscrone, Co. Sligo.

Ireland.—The following contracts have recently been placed by the Commissioners of Public Works:—erection of Garda Siochana Station at Corbetstown, Co. Kilkenny: M. J. Purcell, Coolcullen; reconstruction of Garda Siochana Station at Castletown Geoghegan, Co. Westmeath: P. Nolan, Athlone; erection of Garda Siochana Station, Coachford, Co. Cork: J. M. O'Keeffe, Annabella; erection of National school, Kilmeedy, Co. Limerick: J. Cleary, Charleville; enlarging of Niall Mor National school, Co. Donegal: J. Cunningham, Killybegs; restoration of Land Registry, Dublin: Collen Bros., Ltd., Dublin; improving Louth National school, Dundalk: O. Carroll, Kilcurley, Dundalk; erection of St. Caithlins (Kilvicadonig) N.S., Co. Kerry: J. Flahive, Dingle; enlarging of Salerna National school, Co. Galway: P. J. McDonnell, Leenane; erection of St. Oran's (Sladran) National school, Co. Donegal: Edward Barr, Buncrana.

Irishtown.—Wall round the new burial ground, for the Mayo County Health Board:—
*M. A. Sheridan, Irishtown £380

Langholm, Scotland.—For various works in the erection of 18 houses, for the T.C. Mr. Evan Tweedis, architect, Annan:—

Concrete block work—	
*Johnstone & White, Singapore-road, Eastriggs	£3,343 10 9
Joiner and glazier work—	
*Johnstone & White, Singapore-road, Eastriggs	2,052 10 1
Plaster and roughcast work—	
*Johnstone & White, Singapore-road, Eastriggs	893 16 11
Slater work—	
*T. McKinnon & Son, Lockerbie	544 10 11
Plumber work—	
*T. Goodfellow, Langholm	1,017 8 0
Painter work—	
*T. M. Hyslop, Langholm	210 3 11

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Lexden and Winstree.—Reconstruction of Dedham Mill bridge, for the R.D.C. Mr. W. H. Filer, surveyor, Victoria-chambers, Colchester:—
*F. Hutton & Son, Colchester.

London.—18 flats on the Park Dairy site, Merton-road, Southfield housing estate, for the Wandsworth B.C.:—
*E. Clarke & Sons £7,524

London.—Minor works at Non-provided schools, for the L.C.C.:—
Abbey, Westminster—Holy Trinity C.E.—adaptation as central school—
*Hudson Brothers £995
Camberwell, N.W.—Green Coat C.E.—renewal of floors—
*T. Rutter & Son 115
St. Marylebone—Christ Church—renewal of floors—
*Mattock & Parson 249

London.—Minor repairs to schools, for the L.C.C.:—
City of London—L.C.C. School of Photo-engraving and Lithography—adaptation of 15 and 16, Gough-square—
*W. H. Wagstaff & Sons £905
City of London—L.C.C. School of Photo-engraving and Lithography—heating apparatus at 15 and 16, Gough-square—
*W. Freer 189
Shoreditch—L.C.C. Shoreditch Technical Institute—painting and cleaning Old Castle-street annexe—
*F. Prater & Son 313

London.—Painting and/or cleaning Council schools and institutions, for the L.C.C.:—

Bethnal Green, S.W.—Turin-street—	
*Ferguson & Frawley	£376 0 0
Bow and Bromley—Fairfield-road—	
*G. Keetch & Sons	658 10 0
Bow and Bromley—High-street—	
*Wm. Bailey & Sons (Builders), Ltd.	499 0 0
Bow and Bromley—High-street, Bromley—	
*Geo. Butters	741 0 0
Fulham, W.—Fulham Central—	
*C. Berger	796 5 0
Fulham, W.—Munster-road—	
*White & Johnson	951 0 0
Fulham, W.—Sherbrooke-road—	
*J. Scott Fenn	734 18 0
Greenwich—Invicta-road—	
*J. Hocking & Co.	935 2 0
Hackney, C.—Dalston Central—	
*A. E. Clark	475 0 0
Hackney, N.—High-street—	
*F. Cottrell, Ltd.	971 5 0

Hammersmith, N.—Erconwald-street and Mellitus-street—

*White & Johnson	900 0 0
Kensington, N.—North Kensington Central—	
*V. French	595 5 2
Kensington, S.—Allen-street—	
*W. H. Watts	289 0 0
Lewisham, W.—Adamsrill-road—	
*J. H. Sutch & Sons	624 0 0
Lewisham, W.—Stillness-road—	
*J. B. Boorman & Son	785 0 0
Peckham—Hollydale-road—	
*A. G. Shorter	360 0 0
Peckham—Woods-road—	
*A. D. Johnson	809 12 0
Poplar, S.—Ricardo-street—	
*R. Woollaston & Co.	928 0 0
Putney—Hotham-road—	
*Triggs & Co.	917 0 0
Putney—West-hill—	
*Triggs & Co.	894 0 0
St. Pancras, N.—Burghley (S.B.)—	
*Ferguson & Frawley	228 0 0
St. Pancras—Great College-street—	
*J. D. Hobson, Ltd.	895 0 0
St. Pancras, S.W.—Hawley-crescent—	
*Thomas Carr	807 0 0
Shoreditch—Laburnum-street—	
*Geo. Butters	850 0 0
Southwark, C.—Rockingham-street—	
*Triggs & Co.	583 0 0
Southwark, S.E.—King and Queen-street—	
*J. Scott Fenn	636 0 0
Woolwich, E.—Church Manor-way—	
*J. Hocking & Co.	905 15 0
Woolwich, W.—Mulgrave-place—	
*J. H. Sutch & Sons	960 0 0
Woolwich, W.—Union-street—	
*D. C. Bowyer	794 18 0

Abbey, Westminster—Burdett-Coutts and Townshend foundation—

Holloway Brothers (London), Ltd.	1,129 0 0
Camberwell, N.W.—Green Coat C.E.—	
F. Ward & Sons	630 4 0
Kennington—St. John's C.E.—	
W. A. King & Sons (Brixton), Ltd.	385 10 0
Paddington, S.—St. Paul's C.E.—	
T. Mills & Son	318 0 0
Poplar, S.—St. Matthias' C.E.—	
Harris & Wardrop	185 0 0
St. George's, Westminster—Brompton C.E.—	
Welchman & Wise	498 0 0
St. Marylebone—St. Mark's C.E.—	
W. H. Watts	420 0 0
Shoreditch—St. Paul's C.E.—	
W. A. King & Sons (Brixton), Ltd.	1,624 0 0
Woolwich, W.—All Saints' C.E.—	
Arnold & Futter	449 10 0

London.—Minor works to various L.C.C. schools:—
Balham and Tooting—"Ensham"—minor alterations in connection with the establishment of a central school—
*W. Hammond, Ltd. £638 0 0
Battersea, S.—Basnett-road—alterations to w.c.—
*R. S. Ronald 110 0 0
Bermondsey, W.—The Snowsfields—head teachers' rooms, etc.—
Triggs & Co. 198 0 0
Bethnal Green, N.E.—Chisenhall-road—head teachers' rooms—
*W. J. Dixon & Son 290 0 0
Bethnal Green, N.E.—Olga-street—head teachers' room, etc.—
*G. Keetch & Sons 297 0 0
Bethnal Green, N.E.—Teesdale-street—alterations to stepped flooring—
*Vigor & Co. (Poplar), Ltd. 245 0 0
Camberwell, N.—Mawbey-road—repairs to floors—
*W. J. Dixon & Son 227 0 0
Clapham—New-park-road—head teachers' rooms—
*Triggs & Co. 394 0 0
Greenwich—Glenister-road—sanitary work—
*W. J. Dixon & Son 250 0 0
Greenwich—Hughes-fields—head teachers' rooms—
*W. J. Dixon & Son 333 0 0
Hackney, C.—Gayhurst-road—repairs to flooring—
*J. F. Ebner 124 11 3
Hampstead — Netherwood-street — rebuilding boundary wall—
*J. D. Hobson, Ltd. 168 0 0
Islington, E.—Ambler-road—head teachers' rooms—
*S. Shaw 495 0 0
Islington, E.—Canonbury-road—alterations to stepped flooring—
*G. Keetch & Sons 127 0 0
Kennington—Church-street—staffroom, removal of stepping, etc.—
*Bridge & Co. 288 0 0
Kennington — Upper Kennington-lane — head teachers' rooms—
*T. Brown & Son 383 0 0
Kensington, N. — Portobello-road — rebuilding boundary wall—
*A. & F. Polden, Ltd. 123 0 0
Brixton.—L.C.C. School of Building—timber store and concreted area—
*W. J. Dixon & Son 358 0 0
Brixton.—L.C.C. Clapham Trade School for Girls—installation of electric lighting—
*Alexander Hawkins & Sons 496 0 0
Paddington, N.—Essendine-road—alterations to stepped flooring—
*G. Godson & Sons, Ltd. 178 0 0
Paddington, S.—Harrow-road—adaptation as handicraft centre—
J. Marsland & Sons, Ltd. 222 0 0
St. Marylebone—Cosway-street—head teachers' rooms—
*G. Godson & Sons, Ltd. 375 0 0
St. Pancras, N.—Torriano-avenue—alterations to stepped flooring—
*Marchant, Hirst & Co. 115 0 0
St. Pancras, S.E.—King-street—cleaning and painting housewifery centre—
*Cole Loasby & Co., Ltd. 108 10 0
St. Pancras, S.E.—Prospect-terrace—minor structural works—
*J. C. Mather & Son 197 0 0
Southwark, C. — Rockingham-street — head teachers' rooms—
*W. J. Dixon & Son 233 0 0
Southwark, S.E.—Townsend-street—head teachers' rooms, etc.:—
*W. J. Dixon & Son 359 0 0

London.—Tenders accepted by H.M. War Office, for December:—*Building works and services:* Catterick—artificers' works: A. Ball & Co., Ltd.; Doncaster. Larkhill and Tidworth—artificers' works: Wise & Lansdell, Winchester. Bulford—artificers' works: A. E. Lailey, Salisbury. Woolwich, Royal Arsenal, roof repairs: J. B. Edwards & Co., London. Devizes—alterations to married quarters: W. E. Chivers & Sons, Ltd., Devizes. Netheravon, Small Arms school—alterations and additions to Officers' Mess and Quarters: James & Crockerell, Durrington. Warley Bks.—internal painting: Scofield, Son & Crees, Wivenhoe, near Colchester. Colchester, Sobraon and Goojerat Bks.—external painting: S. Lupton & Son, Bradford. Catterick Camp—erection of unclimbable fence: Bayliss, Jones & Bayliss, Ltd., Wolverhampton. Catterick Camp—extension and re-roofing of war dept. laundry: Geo. Dougill & Sons, Darlington.

London.—Installation or improvements to the lighting of Council schools as follows, for the L.C.C.:—
Brixton—Holland-road—
*Bailey & Incledon £326 10
Deptford—Sprules-road—
*J. Briggs (Electrical Contractors), Ltd. 430
Fulham, E.—Britannia-road—
*Electrical Installations, Ltd. 350
Poplar, S.—Janet-street—
*Smethurst & Co. (London), Ltd. 390 6
Poplar, S.—Upper North-street—
*Barrett & Wright 440
Streatham—The Furzedown—
*Bailey & Incledon, Ltd. 235

London.—Painting and/or cleaning of special schools, for the L.C.C.:—
Greenwich—Rachel McMillan Nursery School—
*A. D. Johnson £70 5
Homerton (Deaf) School, Penn, Bucks—
*H. J. & A. Wright, Ltd. 647 0
Whitechapel and St. George's—Lowood-street (M.D. and P.D.) School—
*Wm. J. Clemens 185 10

London.—Installation or improvements to the heating apparatus at Council schools, for the L.C.C.:—
Bethnal Green, N.E.—Olga-street—
*Buckley's (London), Ltd. £613 5
Bethnal Green, S.W.—Rochelle-street—
*Clark, Hunt & Co., Ltd. 667
Brixton—Holland-road—
*Fretwell Heating Co. 907
Deptford—Deptford-park—
*W. J. Dixon & Son 380
Fulham, E.—Britannia-road—
*J. T. Meredith & Co., Ltd. 835
Fulham, W.—Everington-street—
*Colley, Meikle & Co., Ltd. 495
Lewisham, W.—Dalmain-road—
*White, Blanchard & Co., Ltd. 875
Lewisham, W.—Haseltine-road—
*Cole, Loasby & Co., Ltd. 492
Norwood—Carnac-street—
*Saunders & Taylor, Ltd. 895
Poplar, S.—Janet-street—
*J. T. Meredith & Co., Ltd. 830
Poplar, S.—Upper North-street—
*J. T. Meredith & Co., Ltd. 998
Poplar, S.—Woolmore-street—
*Central Heating, Ltd. 109
Southwark, C.—Rockingham-street—
*W. J. Dixon & Son 352
Streatham—The Furzedown—
*White, Blanchard & Co., Ltd. 763
Woolwich, W.—The Gordon—
*W. J. Dixon & Son 474

London.—Tenders accepted for December by H.M. Office of Works:—*Building works:* Aldeburgh repeater station—slater: Broadbent & Stephens, Leicester. Bexhill-on-Sea Post Office—steelwork: Archibald Dawnay & Sons, Ltd., London. Birkenhead employment exchange—steelwork: E. C. & J. Keay, Ltd., Darlaston. Birmingham post office stores—erection of garage: E. Crowder, Birmingham. Borough Green, Kent, telephone exchange—erection: W. P. Banks, Ltd., Sevenoaks. Bristol Central telephone exchange—alterations, etc.: R. Wilkins & Sons, Ltd., Bristol. Camden Town employment exchange—erection: H. Lacey & Sons, Luton. Cirencester post office—alterations: W. J. B. Halls, Ltd., Gloucester. Godalming telephone exchange—erection: E. D. Winn & Co., Ltd., London. Grimsby employment exchange—adaptations: R. W. Holmes, Cleethorpes. Hackney post office and telephone exchange—erection: The Triangular Construction Co., Ltd., East Molesey. Kew, Ministry of Labour Offices—alterations: A. Logan, London. Kilchoman Coast Guard Station—erection of houses, etc.: J. Taylor, Clydebank. King's Cross employment exchange—erection: F. Hutton & Son, Colchester. Kenilworth post office and telephone exchange—alterations: Exors. of R. P. Gathercole, Leamington. Leyland, Preston, post office and telephone exchange—erection: The Leyland Construction Co., Ltd., Leyland; steps: Stewart's Granolithic Co., Ltd., London; asphalter: Limmer & Trinidad Lake Asphalt Co., Ltd., London; steelwork: Harry Peers & Co., Bolton; stonemasonry: J. J. Thomson, Preston; plastering: J. B. Walmsley, Chorley. Manchester Parcel post office—roofing: W. H. Heywood & Co., Ltd., Manchester. Manchester, Newton-street Sorting Office—roof covering: D. Anderson & Son, Ltd., Manchester. Molesey telephone exchange—plastering and granolithic work: King & Co., London. Newcastle-on-Tyne, New Bridge-street Employment Exchange—alterations: J. T. Main, Newcastle-on-Tyne. Newcastle-on-Tyne, Dunston Hill Hospital (Ministry of Pensions)—erection: Middlemiss Bros., Newcastle. New Malden, Surrey, telephone exchange—extension: Limpus & Son, Kingston-on-Thames. Norbury post office and telephone exchange—asphalter: London Asphalte Co., Ltd., London. Shepherd's Bush telephone exchange—erection: H. Hann, London. Southbourne, Bournemouth, telephone exchange—erection: F. A. Grigg & Sons, Boscombe. Sutton telephone exchange—plastering: King & Co., London. Thames Ditton, Surrey, telephone exchange—erection: H. Hann, London; artificial stonework: Brookes, Ltd., London; steelwork: A. Dawnay & Sons, Ltd.; London; asphalt work: London Asphalt Co., Ltd.; York stone: Albion Stone Works, London; iron drain pipes: Burn Bros., London; tar paving: A. C. W. Hobman, Ltd., London. Upminster, Essex, telephone exchange—asphalter: Ragusa Asphalte Paving Co., Ltd., London. West Didsbury, Manchester, post office—steelwork: E. Wood & Co., Ltd., Manchester; painter: Chas. Bell (Manchester), Ltd., Manchester; plasterer: W. Brookes, Manchester; mason: Alex. Mackay, Oldham.

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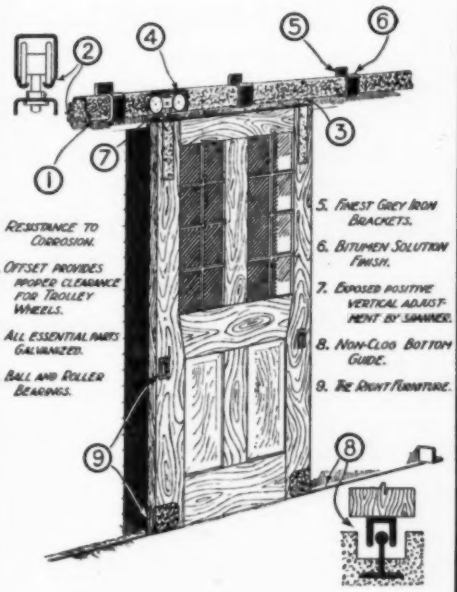
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Maidenhead.—Reconstruction of the Maidenhead Picture Theatre in Queen-street. Mr. T. F. Ford, A.R.I.B.A., architect, 35, Finsbury-square, E.C.2:—
*W. James & Sons, Maidenhead.

Manchester.—Baptist Mission hall in Linwood-street, Newton Heath, for Rev. T. H. Mottershead:—
*Evans & Macdonald, Failsworth.

Manchester.—Extensions to the works for the Broughton Model Laundry, Great Clowest-street, Broughton. Mr. A. Evans, architect, 155, Weaste-lane, Pendleton:—
*D. Walton & Co., Manchester.

Manchester.—Adaptation of premises at 32, Swan-street, for Messrs. Seligson's. Mr. A. McDonald, architect, 71, Meadow-street:—
*A. Pollock, Manchester.

Manchester.—New business premises at the junction of Oldham-street and Back Piccadilly, for Messrs. C. & A. Modes, Ltd. Messrs. North, Robin & Wilsdon, architects, 35-39, Maddox-street, London, W.1.:—
*Russell Building & Contracting Co., Ltd., Manchester.
Steelwork—
*Redpath, Brown & Co., Ltd., Manchester.

Manchester.—Improvements to the branch premises at the corner of Denmark-road and Carlton-street, Moss Side, for the Manchester & Salford Equitable Co-operative Society, Ltd.:—
*Gladden & Davies, Manchester.

Manchester.—House and shop and lock-up shop in Kingsway West Point. Mr. S. Jones, architect, Stockport:—
*H. Barnes, Ltd., Manchester.

Newry.—Rebuilding of Windsor Hill P.E. school, for the Down County Regional E.C. Mr. C. J. Love, architect, 11, Chichester-street, Belfast:—
Building and Plumbing—
*R. Harris, Crossgar.
Heating—
*A. Sayers, Belfast.
Steelwork—
*R. J. MacKinney, Belfast.
Roof Glazing—
*Pennycook Patent Glazing and Engineering Co., Ltd., Glasgow.
Steel Casements—
*H. Hope & Sons, Ltd., Smethwick.

Ongar.—Cottages for the R.D.C.: (1) 4 non-parlour cottages at Berners Roden; (2) 2 at Blackmore; (3) 2 at High Ongar; (4) 6 at Moreton; (5) 6 at Navestock; (6) 6 at Stapleford Abbots; for the R.D.C. Mr. P. R. B. Pearce, Housing Surveyor:—

*(1) H. C. Acres, Shelley-Ongar ...	£1,200	0
*(2) G. W. Spearman, High Ongar	602	10
*(3) Noble & Sons, Ongar	573	10
*(4) Noble & Sons, Ongar	1,636	0
*(5) W. Counel, Brentwood	1,785	15
*(6) H. G. Acres, Shelley-Ongar ...	2,005	0

(One pair parlour type)

Parbroath.—House for the Cupar District Committee of the Fife C.C. Messrs. Walker & Pride, architects, Church-square, St. Andrews. Quantities by the architects:—
Mason—
*Nairn & Son, Ladybank.
Joiner—
*C. Smith, Luthrie.
Plumber—
*G. Mentiply, Cupar.
Plasterer—
*T. Batchelor, Cupar.
Slater—
*T. Batchelor, Cupar.
Painter—
*Randall & Sons, Cupar.

Portsmouth. — Extension of boys' secondary school, for the E.C.:—

F. Corke & Co., Southsea	£11,172
Light Bros., Ltd., Portsmouth	10,930
Bevis, Ltd., Portsmouth	10,654
J. Harding, Southsea	10,547
Howe & Bishop, Southsea	10,406
Tanner Bros., Southsea	10,316
S. Salter, Southsea	10,189
John Lay & Co., Portsmouth	10,174
Jno. Croad, Portsmouth	9,990
G. J. Davis & Son, Southsea	9,880
*E. & E. Sprigings, Portsmouth	9,311

Queensberry.—6 houses at Hastings-avenue:—
*E. Balmforth & Sons.

Rawmarsh.—Middle school, mining centre and caretaker's house, for the West Riding E.C.:—
*A. Gregory & Sons, Ltd.

Richmond.—New hall, to seat about 200 persons, in Lock-road, Ham, for the Free Church Trustees. Mr. W. Alexander, architect, 64, Wellington-road, Hampton Hill, Middlesex:—
*F. D. Hidden & Co., Ltd., Brentford.

Rochdale.—20 houses on the Victoria-place area, for the C.B. Mr. S. H. Morgan, Borough Surveyor:—
*W. N. Ashworth & Son, Rochdale.

Rotherham.—Showrooms in Sheffield-road, for the West Riding Motor Co. (Rotherham), Ltd. Messrs. Cook & Howard & Lane, architects, Brunts Chambers, Leeming-street, Mansfield:—
*C. H. Hill, Mansfield.
Steel Reinforcements—
*British Reinforced Concrete Co., Ltd., Stafford.
Finish to Concrete Floors—
*Duromit from the Kleine Patent Fire Resisting Syndicate, Ltd., London.

Southend.—Open Air school for the E.C. Mr. J. W. Fisher, architect, Wellingborough. Quantities by the architect:—
*G. Henson & Sons, Ltd., Wellingborough £9,400

Staincliffe.—Engine-house at the Union Institution, for the Dewsbury B.G.:—
Excavator, Mason and Brickwork—
*J. B. Allatt & Son, Heckmondwike ... £429
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*Ben Evans & Co., Ltd., Swansea £738 10

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*H. Roper, Ltd.

Thingoe.—For (*a*) 6 cottages at Fornham All Saints, and (*b*) 6 cottages at Rixby, for the R.D.C. Surveyor, 65, Churchgate-street, Bury St. Edmunds:—
*(*b*) G. Ellwood, Bury St. Edmunds £2,293 2 6
*(*a*) W. B. Kingsbury, Boxford, Colchester 2,282 15 0

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*Haughton Bros. £1,280

Youghal.—Improvements to the Cottage Hospital, for the South Cork Board of Assistance:—
*Murray Bros., Youghal £760

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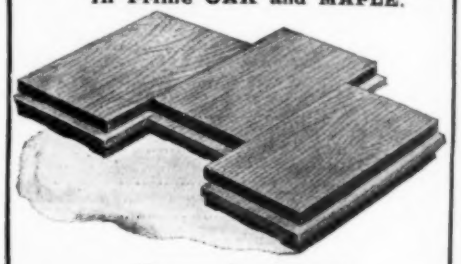
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